

# **Sinclair & SAM**

Issue 2 Available by subscription only

## **COMPUTING**

### *Reviews:*

- DICE
- GM-BASE
- The Copier
- QL Emulator
- Flexipage
- SAM PD software

# **C**

## **PROGRAMMING**

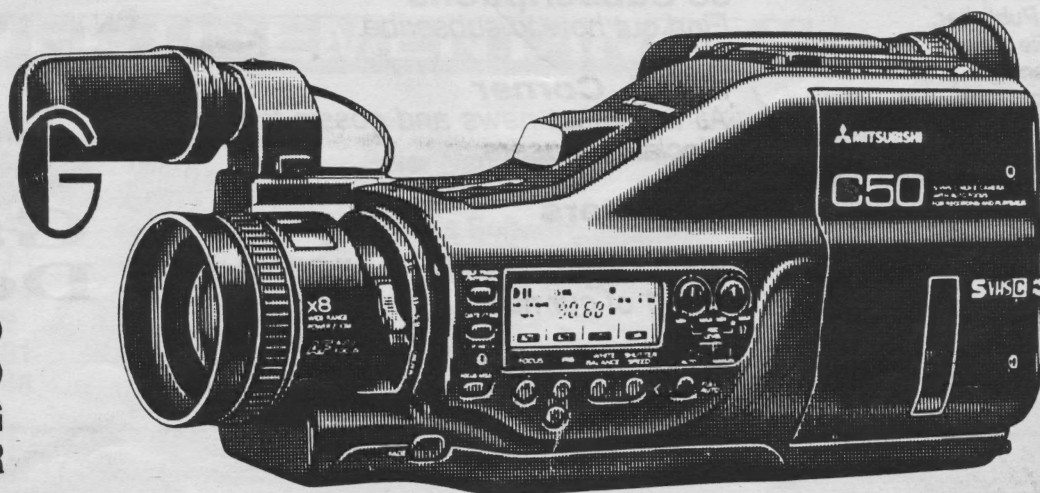
### **ALSO:**

Public Domain  
Latest News  
Show Report  
On-Line  
Advice Line  
*and much more!*

# **VIDEO**

# **TITLING**

DISCOVER HOW TO  
ADD TITLES TO  
YOUR VIDEOS USING  
A SPECTRUM OR  
SAM.



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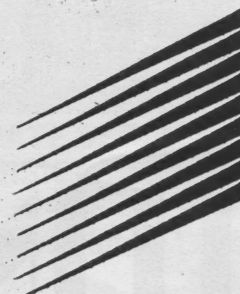
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**Garner  
Designs**  
Publishing



# Editorial

Firstly, a big thanks to everyone who has subscribed to the magazine. We're glad so many people have put their faith in our ability to produce the kind of magazine you've been wanting for quite some time.

If you've been with us since issue 1 you will have noticed that we've changed the design of the magazine slightly for this issue. Although we plan to continually improve the magazine in this department, we won't be doing anything too drastic - just enough to make sure we don't get into the same boring rut that other magazines seem to have.

## Blast-off

We're gearing up here for the launch of issue 3, which will be our biggest and best issue yet. It will include a free cover-mounted disk for SAM users which I think I am right in saying that this is the first time there has been a SAM cover-mounted disk on a magazine. It will also be special because it is free too - there's no additional charge at all. Issue 3 will also have a free tutorial booklet on the cover too. We hope you'll like this kind of giveaway cover-mounts.

We plan to do cover mount giveaways on a regular basis, so if you have any ideas about what you'd like to see, get in contact with us.

## BBS

We should hopefully have news about our BBS soon. We've got the

stage where we've got a short-list of two BBS packages which we're putting through their paces to see which one will be the best for our purposes.

## New Columns

As the size of the magazine increases of the coming months, we will be expanding our current columns and adding new ones. This month for example, there's the Emulator Spot which should develop into a highly interesting forum for users wishing to use their computers to emulate another. A spin-off from the column has been that we shall be stocking the emulators themselves. As most of the emulators around at the moment are in the public domain we have started to add them to our PD library. There's also talk of hardware based Spectrum emulators becoming available too. We hope to be able to stock these too.

In order to help us gauge what sort of articles you want to see in Sinclair & SAM Computing, and to help us find out more about our readership, we're planning to hold a survey next month. All being well, we should have the forms ready for inclusion in issue 3. I hope that we get as good a feedback as we did with a survey we carried out some time ago when we were running the +3 Users Group.

In the meantime, if you've got any comments about Sinclair & SAM

Computing, we'd love to hear them. Just drop us a line.

## COCK-UP

It has come to my attention that in the back of issue 1 it proudly said ISSUE 2 OUT Friday 19th April. Oops! Apologies all round for that one. April 19th was in fact that day the first batch of issue 1s were mailed to subscribers. The mistake slipped in in the rush to get the first issue finished so that we could get some advance copies of it along to the All Formats Fair at the end of March.

## QL users

Our QL following seems to be picking up quite nicely. We're beginning to get quite a lot of support from the QL supporting companies.

As you may well have already gathered issue 3 is going to be a big issue for us and QL users won't be left out - we'll be expanding our QL coverage quite a bit which should mean we are at last able to include in-depth reviews of QL products.

## Contributions

We welcome contributions to the magazine and we'll pay handsomely for your work.

Articles should be concise and informative, and although grammar and spelling can be corrected by us, make sure the factual parts of your article are indeed facts!

We can except articles in the following formats:

- hand-written (make sure its neat though!),
- typewritten or word processed,
- Tasword +3 or Wordmaster files on Spectrum +3 disk,
- IBM PC disk (720K disk format only) with file(s) in ASCII format,
- AMIGA disk with file(s) in ASCII format,

For those who are thinking of writing an article, please contact me, Daniel Garner, just to make sure that somebody else isn't doing a similar article.

*Daniel Garner*

# News

**FIRST WITH THE NEWS  
FOR THE SPECTRUM  
AND SAM COUPÉ**

## COVER-MOUNT CEASEFIRE

The three major Spectrum games magazines, have all agreed to experiment with reducing the number of full price games on cover-mounted cassettes.

Trade body ELSPA has been campaigning for about 6 months to get full price games removed from cover-mounted tapes and disks as it is harming software sales, which at a time of recession cannot go on. Universal agreement has been accomplished on 16-bit games magazines, with C64 magazines agreeing only restriction last month. However, at that time Spectrum magazines were not included due to Sinclair User's publisher view that free games were the only thing keeping the Spectrum market alive and cutting them back would kill the market.

However, an experimental period lasting for the September and October issues has been agreed. Each magazine will only contain two full price games on the cover-mounted cassette.

If sales of the magazines significantly suffer, the restriction will almost certainly be revoked. However, Crash publishers, Newsfield, have announced that the June and July issues will feature TWO boxed cassettes on the cover, with many games and demos on each. This final blitz before the ceasefire may only cause to make estimating if magazine sales has fallen even harder than it normally would be.

Newsfield have also announced that Crash will be relaunched for its August issue. Publisher Oliver Frey claiming the revamped August issue will be "bigger and even better than ever". If you're hoping that the revamp will return the magazine to its "good old days", we wouldn't suggest holding your breath.



## Music Writer add-on

Garry Rowland, publisher of the acclaimed *Music Writer* composition package for the Spectrum has announced a major extension utility for the software.

"MW Play" will allow Music Writer users to play compositions outside the main Music Writer program or even in your own program.

A criticism made of the otherwise excellent package was that music could only be played within the Music Writer environment.

However, with the imminent launch of MW Play, this limitation is lifted and will allow Music Writer to be used for composition of music within your own programs.

BLUE TAIL FLY

(traditional)

Better known  
as Jimmy  
Crack Corn!  
Arranged by  
Garry Rowland



Press any key  
to start

PLAYS COMPILED MUSIC WRITER FILES  
PROGRAM BY GARRY ROWLAND

More details can be obtained from:

G. Rowland,  
PO Box 49,  
Dagenham,  
RM9 5NY.

And don't forget that Garner Designs are official suppliers of the Music Writer software.

## Messenger ready

SAMCO's *Messenger* device enabling SAM users to port Spectrum games direct to the SAM will be ready by the time you release this.

The device and accompanying software will be of most use to those users who find loading Spectrum games into their SAM via tape troublesome (i.e. almost everyone).

The price of the Messenger is £29.95 and full details can be obtained from SAMCO on 0792 700300.



## SAM Mice

After seemingly ages of waiting for a mouse to be produced for the SAM Coupé, it now seems as two will be available. SAMCO's own mouse is now available priced at £39.99, while Blue Alpha have developed a mouse as well.

Blue Alpha's is the most interesting as although it doesn't plug into the SAM's mouse port, it comes with a piece of software which makes it compatible with the SAM mouse system, so you can use it with existing and future software supporting the standard SAM mouse. Price details were not available at the time of press, so contact Blue Alpha on 0792 310865 for more details.

SAMCO have also developed a tracker ball costing £49.99 which is aimed at those users who don't like to use a mouse but still want the flexibility of mouse-like control. SAMCO can be contacted on 0792 700300.

In the meantime, we hope to be reviewing both mouse devices in a couple of months time.

-----

## Comet Assembler

Edwin Blink's **Comet** assembler is apparently progressing well with a release scheduled for August 1st. It is being released by Revelation and promises to be the best assembler for the SAM yet. With features which SAM assembly programmers have been waiting for, such as no line numbered source code and very fast operation, Comet should be very special.

## The Denmark connection

Dansoft seem to be switching their attention towards the SAM at the moment. Their latest release **Budget** is a home financial planning package priced at £7.95. Available from SAMCO.

## MAY

*All Formats Computer Fair*  
Royal Horticultural Halls, Victoria,  
London.  
*Saturday 18th May*  
John Riding (0225) 868100

## JUNE

*All Formats Computer Fair*  
National Motorcycle Museum,  
Birmingham  
*Sunday 9th June*  
John Riding (0225) 868100

*All Formats Computer Fair*  
Royal Horticultural Halls, Victoria,  
London.  
*Saturday 22nd June*  
John Riding (0225) 868100

## SEPTEMBER

*Computer Entertainment Show*  
Earls Court 2, London  
*September 5th-8th*  
EMAP Exhibitions (071) 404 4844

*All Formats Computer Fair*  
Royal Horticultural Halls, Victoria,  
London.  
*Saturday 7th September*  
John Riding (0225) 868100

*All Formats Computer Fair*  
National Motorcycle Museum,  
Birmingham.  
*Sunday 14th September*  
John Riding (0225) 868100

# SHOW WATCH

# SHOW REPORT

**Daniel Garner** casts a critical eye at the first All Formats Fair to be held outside of London.



It has to be said that limiting a show like the All Formats Fair to a London venue wasn't really do the show justice. So when the first venue outside London was announced, exhibitors fell over themselves to get stands. As it turned out, the public also fell over themselves to visit the show. For virtually the entire duration of the show, the aisles in all the halls of the National Motorcycle Museum were packed.

The Spectrum and SAM companies had a hall virtually to themselves, with the QL companies taking upon a large part of the adjoining hall. The pleasant interior of the Motorcycle Museum makes the venue preferable to the London one, both in terms of travel from various parts of the country and in the actual venue.

All the usual companies were in attendance at the show, along with some which don't usually get along to the London shows such as Flexibase Software. SAMCO had their usual stand, as did companies such as Chezron, Enigma, SAM Supplement and PBT. The usual QL companies were at the show too, such as Quanta, EEC and Digital Precision.

There were also a lot of stands selling accessories, and the usual

sort of bargains could be found, including company selling colour monitors for about £50. Although the London All Format Fairs are well supported, this show was extremely well supported with the halls being packed by exhibitors and the public alike.

Garner Designs also had a stand, and did what is becoming a habit ... selling out of all the copies of Sinclair & SAM Computing that were taken. Its the second time running its happened - both times we got the estimations wrong!

The only real news product-wise that I could find (no doubt the ones I missed will be gently pointed out by the companies concerned) was the release of Enigma Variations' Escape from the Planet of the Robot Monsters.

Many thanks to everyone who popped along to our stand. A lot of faces were put to a lot of names.

Make sure you come along to our stand at the All Formats Fair on Sunday 9th June at the National Motorcycle Museum. However, far you travel to get there, you'll find something which will make the journey worth while.



# VIDEO TITLING

Ever thought of using your Spectrum or SAM for DTV? No, I don't mean DTP ... DTV is Desk Top Video and this major series provides a "from basics" insight into using your computer to add sparkle to your video creations.

Camcorder owners are hereby granted leave to rub their hands with glee ...

If you own a camcorder you'll probably have seen the many camcorder and video magazines touting the qualities of the Amiga as the ideal partner for title creating, animation, etc. Although, it must be said that the Amiga is ideal in this application, quite acceptable results can be achieved using a Spectrum or SAM Coupé. Most camcorder users soon get tired of their machine's built-in character generators or static display drivers, and even those machines which allow the addition of a dedicated character generator don't provide the sort of flexibility needed. The only real use for such character generating facilities is to overlay text, the time/date, a stop-watch, etc onto your videos.

However, for introductory titles, credits lists, etc the built-in facilities are really lacking. So with a little ingenuity you can get some very interesting titles and even some special effects onto your video creations using a Spectrum or SAM.

This article is split into five sections will cover the following things and will be printed in consecutive issues :

- the technical aspect of connecting a video to your computer and how to produce titles with a graphics package,
- how to achieve special effects such as fades, wipes and scrolling of your titles,
- filming techniques using your titles and editing equipment for professional results,
- a complete video titling package for Spectrum users to type-in and use, combining all the features which have been described in previous issues with a few more besides,
- the SAM version of the video titling package, taking full advantage of the SAM's additional features.

## LINKING UP RF Signal

Both the Spectrum and the SAM can be linked to a video recorder using the standard RF signal, i.e. the standard UHF TV signal. All you need to do is to disconnect the lead linking the video to your main TV aerial and plug your Spectrum or SAM's TV lead into the socket marked ANTENNA IN or TV IN.

Now, as most video recorders work on the same channel as the Spectrum and SAM (normally around channel 36), it is necessary to adjust your video recorder to work on a different channel. This is normally done by turning a screw-type mechanism on the back of the video. Consult your video's manual for details about how to do this.

You will know when everything has been tuned in correctly, when you see the computer's display through the TV attached to the video. Although the quality will not be brilliant, it is still very acceptable.

## Video Signal

Connecting the SAM to a video is achieved very easily on most videos, as both the SAM and the majority of video recorders have SCART sockets. SAMCO sell a suitable lead which will link the SAM SCART socket to a standard SCART socket, in this case a video recorder.

On a Spectrum the task is not quite as easy. Firstly, only the 128K Spectrums have an output suitable output, and you will probably need a custom lead, or a video lead conversion kit at least (available at A/V shops such as Tandy) in order to get things linked up okay. Since many standards exist on videos when it comes to connecting things to them, especially older ones, it is

best to consult your video's manual to see exactly needs connecting to what.

Most videos have a switch which needs to be set to tell the video to switch to an external auxiliary input, in our case the computer's output. This may have settings such as TV/AUXILIARY.

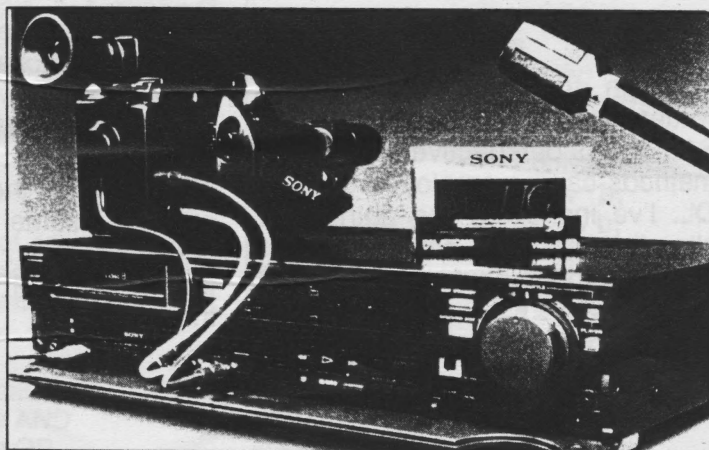
Connecting your computer to the video in this way will yield much better quality than using the RF signal.

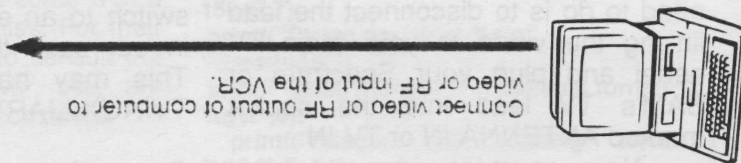
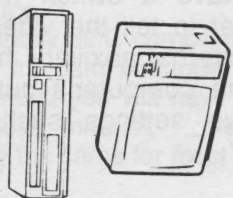
## Once Linked Up

When you can see the computer's display clearly on the TV you are all ready to start producing graphics and recording them.

It is best to start experimenting within a package like FLASH on the SAM, or Artist 2 on the Spectrum. Simply create some graphics and some text on the screen, and select the VIEW SCREEN option so that the entire screen is displayed without all the program's options, etc around the screen.

Now set your VCR to record for a few seconds. Then stop it, rewind and play it back. However, because you have had to change the operating channel of the video, in order to see the recorded sequence, you will almost certainly have to re-tune this channel selector screw to its original position. This is a pain while you are experimenting, but





**BASIC Program to  
display titles, etc**

**Art Software**

once we start to build up programs and routines further on in this series of articles you will be able to preview everything in software and be sure that everything you have recorded is as you intended it to be.

### STATIC GRAPHICS

In order to get the hang of things, its best to create some screens using an art package. Although you can produce flashy titles with large multi-coloured letters, what sets this kind of thing apart from character generators for camcorders and

videos is that you can incorporate graphics onto your videos too.

Obviously, if your not artistically inclined you may not be able to design masterpieces, but even simple graphics will make a drab title look more interesting. You could also of course, use one of the many graphics which are available on disks such as Outlet or FRED, or an even better source is the massive amount of clip art pictures available. All you need to do is load the graphic into your art package, edit it is required - add a title to it for example, and re-save it to tape/disk.

### Eds Note:

Although this article has been written from the Spectrum and SAM user's perspective, the same methods can be employed on the QL. I've instructed the author to alter the article to cover the QL aspect from the next issue.

There are endless possibilities with using art packages. FLASH users are especially well catered for. You can for example use the colour cycle feature to produce some great effects, and the animation facility provides some simple, yet good animation tools. Animation will be a theme we shall return to later on in this series.

### Advice Line

If you have any problems getting anything we've described in this article working we've your particular video equipment, give our *Advice Line* service a call and we'll do our best to get everything up and running.

It is available on 0582 472067 at the following times:

Mondays, Wednesdays, Thursdays  
and Fridays from 2pm until 5pm.



I enclose my subs for the next six months. May I add how much I look forward to each monthly issue of OUTLET coming through the post box and how delighted I am with the contents. J.W.

.. OUTLET is undoubtedly the most intelligent and interesting magazine for the Spectrum - please keep up the good work. 151/88

.. the standard maintained by OUTLET

the disappearance of dedicated software enthusiasts and OUTLET.

.. OUTLET keeps

I'd like to say month producing but they are certainly high standard of

.. I've been with OUTLET for a year now, and I can say it's one of the smartest moves I've made for ages. the quality is excellent, the service reliable and efficient and the variety of programs is extensive. 168/23

.... my thanks for the many pleasurable hours I have had with your tapes .... I hope you go from strength to strength. 175/25

Thanks a lot for the excellent OUTLET No.035 disk for SAM ... I was fascinated with all the information and demonstrations. The SAM information will be especially helpful to me ... thanks again for all your efforts. 169/38

**GRAPHICS  
INFO AND  
IDEAS!!**

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AND SPECTRUM  
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INTERESTING**

**MONTHLY HOME GROWN SOFTWARE!!**  
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PLUS 3 DISC, DISCIPLE/PLUS D, OPUS, MICRODRIVE,  
TAPE AND SAM DISK**

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157/27

.. must say how impressed I am with the ever increasing quality of OUTLET ... for example PROCROSS was, in my opinion, one of the best utilities for the Spectrum I have ever seen. 182/03

I found your software easy to use, useful and enlightening 195/8

Once again I am impressed with the first class service and care you give your customers. Unique! is the only word that fits ... Thanks again for the trouble you have taken to produce a 5.25" disk of OUTLET to run on the SAM. 203/04

# RAINBOW

*The Colour Printer Utility for the Spectrum and Star LC10C, Star LC200C or Epson JX-80 Colour printers.*

Exploit the colour printing capabilities of your printer to the full with **RAINBOW** - the original and the best colour printout utility.

The simple menu-driven control program allows you to load in any SCREENS file and output it to any Star colour compatible printer in **FULL COLOUR**. However, it also allows you to tailor the output - line feeds and margin settings can be altered, as can the area of the SCREENS that is printed, etc.

Others have tried to capitalise on **RAINBOW's** success by bringing out rival versions. However, with **RAINBOW** priced at just £6.95 on tape or disk, and its nearest rival priced at an exhaustive £19.99 for a program which basically does what **RAINBOW** can do, its not hard to see which one is better value for money.

In short, **RAINBOW** is essential to any Spectrum user with a Star LC10 (or compatible) printer. If you're thinking of buying one of these printers then **RAINBOW** will be the only software you'll ever need to make the most of it.

What's more, our policy of continued improvement means that it is being improved all the time. Upgrades to future versions are free and customers will be informed of new versions and their specifications by post.

See page 44 for prices and ordering instructions.

# CLIP ART

The ultimate collection of clip art is now available for the SAM Coupé as well as the Spectrum! We have also recently extended our range, which total well over 800 pictures!

Anybody with PCG's Desk-Top Publisher or any art package can use the clip art to add that extra bit of sparkle to your documents and designs.

All the pictures are of very high quality and will add professionalism to everything you design incorporating them.

The subjects covered by the entire range include: sport, education, animals, religion, vehicles, signs, humour, cartoons, and many many more; with each tape/disk containing some of each.

We have rationalised our range of clip art so that they are grouped into attractive Presentation Packs each containing either two tapes or two disks (depending on the format you require). Each Pack also contains full instructions showing you how to incorporate the clip art pictures into your own designs.

See page 44 for prices and ordering instructions.

# Disk Information Copier Editor

Disk Information Copier Editor (DICE), is a disk maintenance utility for Spectrum +3 users. Kobrahsoft have recently finished work on update 3.0 of the program, which we are reviewing here.

The first thing you notice about from both its advertising in magazines and the instructions manual is that it is completely unpretentious about what it does. It has good reason too, its sheer wealth of useful features enable DICE to be used in a variety of situations all of which DICE will more than adequately cope with.

Upon loading DICE you are presented with a screen showing a representation of the usage of the

disk in the disk drive. DICE can now read a wider variety of disk formats, including 173K, CPC 175K and 178K, 193K and 203K. This makes DICE vastly more usable than the older version because the majority of +3 users use either the Supermat or HiFormat utilities to format their disks. DICE can also format disks to any of the capacities just listed.

From this main screen all of DICE's function can be accessed. The NEW option instructs DICE to clear its current data and read in new data from the disk in the disk drive. The INIT option enables you to format disks to Plus3, System, Data, 193K or 203K formats. The FILES option enables you to list and modify the disk's directory. DISK allows you

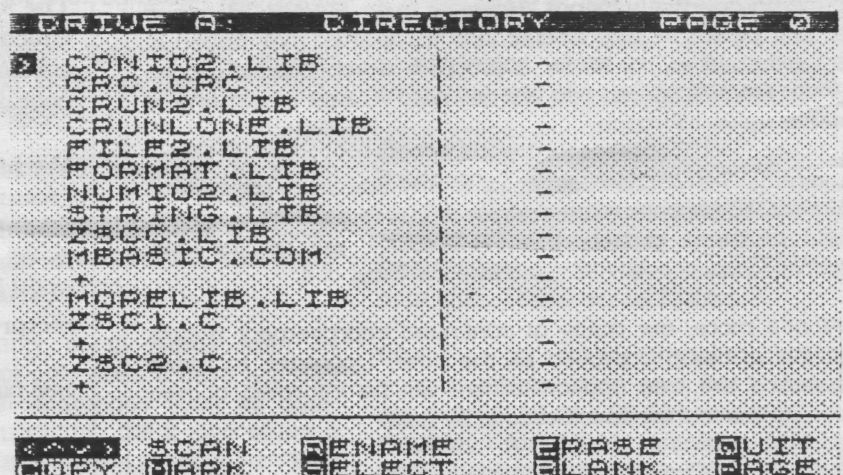
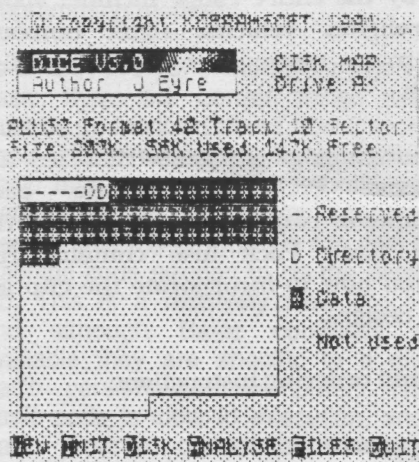
to access the disk's data at sector level. ANALYSE does much the same, but enables access to non-standard sectors, as used in copy-protected programs. Finally, the QUIT option sends you back to +3 BASIC.

All these options are available with a single key-press, e.g. F for the File option or A for the Analyse option.

Upon selecting the FILES option, the display changes and you are shown a list of the directory entries on the disk. Erased files and CP/M files with CP/M info are specially marked.

From this display files can be renamed, erased or copied onto any disk. The Mark option enables specific files to be used during the copying or erasing options.

The Copy option has two advantages over using +3DOS's COPY command. Firstly, files are copied to the new disk in an unfragmented form whereas the file may be scattered all over the place on the original disk. This makes file loading faster. Secondly, the copying process is speeded up by the lack of disk swapping necessary. For an





entire disk, DICE only requires you to swap disks 3 times (4 times for a high capacity format), whereas +3DOS's COPY command requires a disk change for every file on the disk.

The Select option enables you to find out specific information about a particular file. This information includes the exact position on the disk where the file is located, the space it occupies and whether it is an erased file. Erased files can be recovered at this point using the Recover option. However, if part of the file has been over-written recovery will not be possible and DICE will tell you of this.

A graphic display also represents where the file is on the disk. This is very useful as it shows if a file has been fragmented across the disk. Options are also available to examine the file's header to find out what kind of file it is, where it loads to in memory, etc; as well as an option to change the protection, system and archive file attributes of the file.

The examine option enables you to examine the file in Hex and ASCII format. In this mode you use the cursor keys to look through the file. Alterations to the file can be made directly to the file byte by byte. In this edit mode, the value of each byte is also disassembled into assembly so that machine code routines may be examined. Although it does not have the scope of a full-blown disassembler it is very useful to have limited features available within DICE.

The DISK option from DICE's main title screen allows you to examine or alter the disk's contents at sector level as opposed to file level. The screen contains 128 bytes of data from the block, track and sector position marked at the top of the screen. You can scroll through the disk's contents using the cursor keys. You can also jump to specific a sector, block or track on the disc if required.

Being able to look through the contents of a disk, and jump to specific parts of disk, is all very well but what about if you know what you want to look at but you don't know

where on the disk to find it? Well, the Find option comes in very useful here with you being able to specify a string of upto 8 bytes for DICE to search the disk for.

You are also able to attempt to recover data in this mode when a file has become corrupted for some reason. Individual blocks of data from the disk can be 'logged' and when all the blocks for a particular file have been found on the disk, these blocks can be copied to a new disk with a filename attached to them so that a new file is created. Although, it is sometimes not possible to recover the whole of a particular file after corruption has occurred it is normally possible to recover the vast majority.

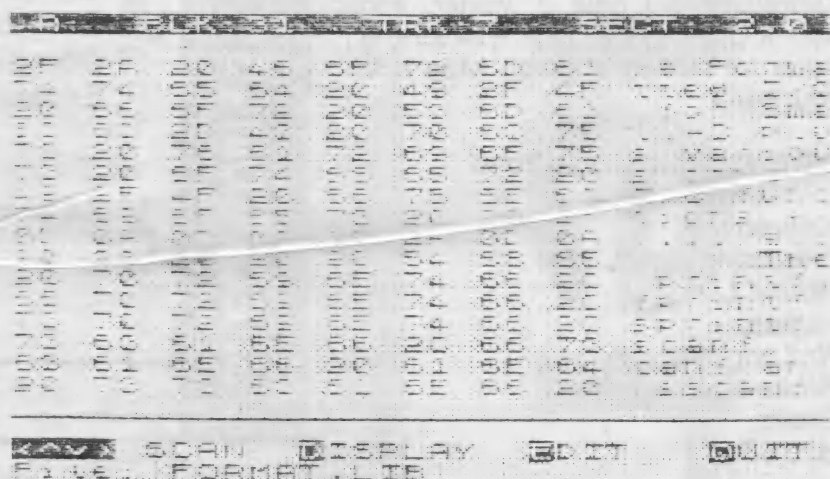
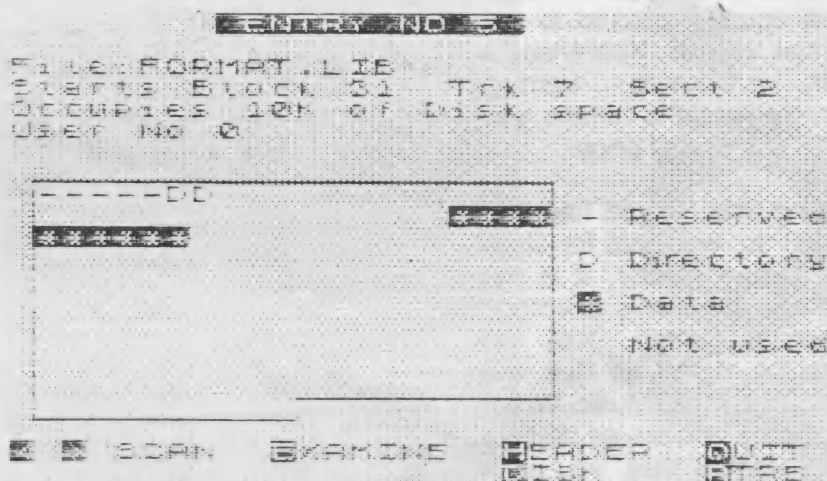
Disk data can be modified using the Edit option, which works in the same way as for the edit functions

for particular files.

Finally, the ANALYSE option on the main menu enables you to examine and modify data on disks which the sectors are stored in a non-standard format. Basically, this means that disks which don't have 9 sectors of 512 bytes can still be examined.

This is not the kind of thing you want to be doing if your faint hearted as the process is quite complicated.

DICE's instructions manual is very good indeed. It does a good job of explaining what all of the program's options do, as well as giving some quite in-depth technical information about how files are stored on disks, how to recover corrupted data and such like. The manual contains example screen pictures to show



you what you should be expecting from the program at different points of the program which is essential for beginners who could otherwise unwittingly wreck a disk without such information.

The only moans about the manual is its lack of an index and its A4 format which really is too large for a manual such as this. An A5 sized manual would have been more convenient.

As for the program itself, it can hardly be faulted. It allows so many things to be done. Its ease of use and the user's ability to back out of do anything drastic to a disk's contents at any point make it ideal for everyone. Even though it has some very advanced features indeed, there is still enough there to warrant people who may never use the advanced features to still buy it.

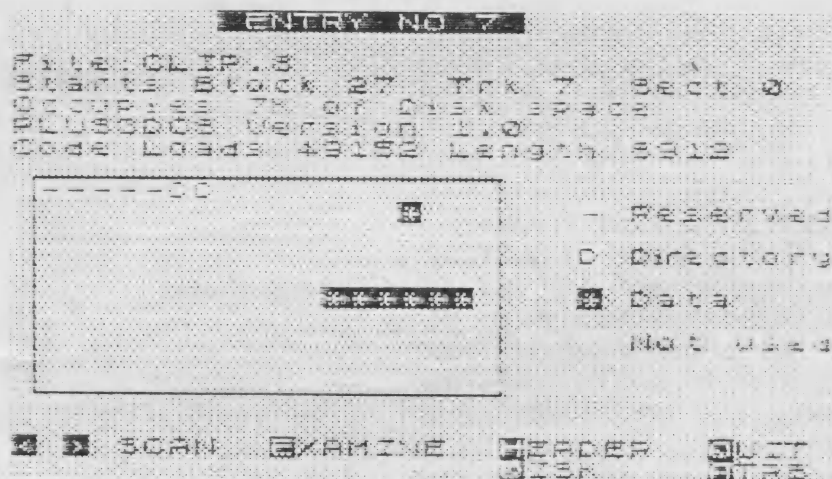
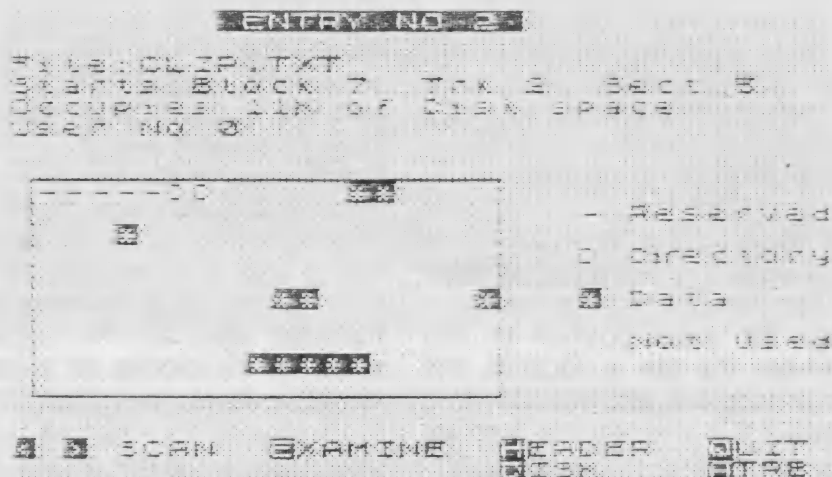
Existing DICE users with the older versions are equally advised to get hold of the new version. Kobrahsoft's policy for customers wanting updates on old versions means you can get DICE V3 for half price.

The only thing that I could find that DICE couldn't do, was that for discs with bootable boot sector, it is not possible to see the disc's directory. For commercial games, data will probably not be stored as files, but for programs such as Music Writer which is bootable and stores its data as standard +3DOS files, you can't get at them with DICE.

DICE has always been the best disk maintenance utility for the Spectrum +3, and with the release of version 3, Kobrahsoft are onto a winner, and with a price tag of only £14.95 the value for money is great. Miss it at your peril!

DICE V3.0 is available from:

**Kobrahsoft,  
"Pleasant View",  
Hulme Lane,  
Hulme,  
Nr. Longton,  
Stoke-on-Trent,  
Staffs,  
ST3 5BH.**



SPECTRUM +3

## VERDICT

✓

**Massive amount of features**

**Easy to use**

**Complete disk maintenance utility**

**Excellent value for money**

✗

**A4 manual a bit clumsy**

95%

**12** SINCLAIR & SAM COMPUTING MAY 1991



## SAM DICE

SAM Coupé users will be pleased to hear that Kobrahsoft are just about to release a version of DICE for the SAM.

Unfortunately, we received the SAM version just too late for a review of it to be included in this issue of Sinclair & SAM Computing. However, there will be a full review of the program in issue 3.

Just to get you licking your lips in anticipation, here's the feature list according to Kobrahsoft:

- Read disk sectors, data displayed in Hex and ASCII. Also modify disk sectors - input numeric, decimal or Hex,

- Supports most 3.5" double density formats with an analyser to examine and edit non-standard sectors,

Backup disk files - ALL or selected files with only around five disk swaps (7 for single drive),

Full directory listing including hidden and erased files with one key press to recover, if possible, erased files,

Recover lost data from part files or disks with damaged directories plus erase single or multiple files.

Rename files; set/cancel file attributes; move files within the directory; read file headers,

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**new available version 2.8** Many of the requested features have been added such as loading from drive 2, returning to Spectrum mode without clearing the RAMDISK, etc. **V2.8 can even read dual density OPUS disks on your SAM.**

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## FORMAT

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# PDomain

**Daniel Garner and Brent Stevens** bring you the monthly round-up of the rich variety of PD software available.

## S&SC PD Library

### Latest News

As well as news of a program to help you find out which of the programs in our PD library will be of use to you, we've also added from Amiga PD. No, we're not going bonkers. Just read the section below for more details.

#### InfoPD

Although we have just enough space in the PDomain column to list the tapes and disks available, we don't have enough space to say what each program does. With this in mind, we are currently writing a program called InfoPD (a version of a program ex-Plus 3 User Group members will remember as Infobase).

InfoPD will contain full details of what every program in the PD library does as well as loading and operating instructions for every program to help you out when you obtain it.

InfoPD will be available from the launch of issue 3 of Sinclair & SAM Computing for the Spectrum for the paltry price of £2.50 on cassette for the 48K/128K/+2(A) or £3.95 on disk for the +3.

We plan to add a new cassette and disk to the PD library every two months, therefore updates to your InfoPD cassette/disk will be available for just 75p so that you can keep abreast of our new PD software.

#### Amiga PD

As you will see over the coming months in our Emulator Spot column, there is a whole range of software which allows the Amiga amongst others to emulate the Spectrum and QL. Most of these are available at very little cost due to the fact they have been released into the public domain.

For this reason, we are expanding our PD library to include such programs for people with Amigas, STs, etc. This month sees the start of this with the QL Emulator and Spectrum Emulator being made available to you for Amiga users. Hopefully next month we'll have the ZX81 emulator for the Atari ST in the library too.

#### PD #1

Noughts & Crosses, Revise!, Menu/CAT Utility†, Boot Sector Modifier†, Headload†, Headcopy†, Cat all†, Parameters†, Set Default Utility†, April Menu, CAT†, K Free, REM Store, Axel F\*, BASIC Compressor, Screen Planner, Sort Demo, Date 2 Day, Ultra Clear A Screen, Label Maker, TV Trivia, The earth, Sunset

#### PD #2

SecureIt, AutoSecureIt, Logo, Vector 3D, Other Worlds, Varisave, Multi-Flash, Trans 48†, Super Input, SpecTec Demo, Boot†, Sound to Light, Kingfisher, Countryside Scene, Autoloadert, Easylist

#### PD #3

Calendar, +3 Disk Checker†, Fonts, Recover†, Big Text, Screen Fade, Hex-Dec-Hex Converter, REM Address Finder, 64 COLUMNS Display, Chordata, Drawmaster, Axel-F The Sequel\*, Fonts Galore, Ramset†, Crunch†, Double Height Text, INSTR\$, LEFT\$/RIGHT\$/MID\$, +3 to 128 BASIC Converter†

#### PD #4

Oxygene, Guardians, Morse Code Tutor, Mouse Pointer Routine, Mega Blast, Compare, Hold It, Code Shifter, 48 Return†, Hangman, Procross, Supermat

#### PD #5

CD Demo\*, Manager\*, HI Formatt†, Amiga Ball, Optical Illusion, Box Clever, Up the Wall, AI Demo, Biorhythms, Super Darts, MasterMind, New Pointer Routine, Jacksoft Assembler

#### PD #6

CDOS†, Gagdisk, Monitor, Disassembler, Ghost†, Timed-Tables, Sums, The Shrink, Graveyard, Banner Maker, Music Trivia, One Arm Bandit, The Rat

#### PD #7

Objects, Japanese Patience, Oerkenvan, 4 in a Line, Garden, Solitaire, Solchess, Smooth Scroll, Toolkit 50, Utility 1, Utility 2

#### PD #8

Linesplit, Chezfill, Grouf, Oh Sh@£!!, Convert, ANSI Graphics, REM Maker, Mylinear, Milgraph, Homesec, Clip Art, Batman, MC to BASIC, Planet, Ghost & Goblins, Menu†, Z80 Disassembler, Boom Box, Drumbeat, Snake, BASIC Compiler, 32x42 Screen Display, ASCII to BASIC.

#### PD #9

Trail Racer, MaxiRAM†, Ball Demo, Editview 2, TV Test 2.

†Spectrum +3 specific and not included on tape version \*Not compatible on a Spectrum 48K ‡Spectrum +2A & +3 specific

## WHAT IS PUBLIC DOMAIN SOFTWARE?

'Public Domain (PD) software' is software which the author has given up the copyright of and so can be copied and freely distributed. However, this distribution must be on a non-profit basis.

A common substitute for the term 'public domain' is 'freeware', which denotes software that the author still holds the copyright to but, like in the case of PD software, decrees that the software may only be distributed on a non-profit basis.

## CP/M Disks

The S&SC PD Library also contains a number of Spectrum +3 discs for users of the CP/M operating system.

### CP/M #1

Expanded disk catalogue, DICE-like disk maintenance utility, disk copying tool and VDE - a good Wordstar compatible word processor.

### CP/M #2

A MASSIVE collection of programs and routines. Includes: Anagrams, biohythms, calendars, currency conversion, disk clear-up utility, file cruncher, library utility, Mastermind game, ASCII file displayer, base conversion, file sorter and much more.

### CP/M #3

Another huge CP/M collection including: File extractor, FX80 printer tool, file printer, new RAM disk program, REM remover, find and exchange program, "Wordstar" cleaner and more! Something for everyone.

### CP/M #4

Another great assortment of programs: useful text formatter to print on BOTH sides of fan-fold paper, file chopper, control stripper, find word routine, sector editor, word/line counter, SpeccyMex (+3 version of the Modern EXecutive) and more! Serious +3 users will love this!

### CP/M #5

If you're into programming, get this. It contains: an excellent version of 'C' (with files, including a code optimiser!) PLUS a very comprehensive Z80 assembler.

### CP/M #6

Contains a version of the industry standard MICROSOFT BASIC. Also, files for CP/M #5's 'C' compiler and more.

### CP/M #7

DBQ - a database with a powerful structured query language, designed for ease of use. Complete with 59K on-disk manual.

### CP/M #8

DIMS, an easy to use card-index style database capable of mail merge, label printing, etc. Can even create mail merge files compatible with Tasword +3.

### CP/M #9

DU49 - a superb multi-disk formatter and PLOT33 which will turn your printer into a graphics plotter!

## Emulator PD

### Emul #1

Sinclair QL emulator for users of the Amiga. Comes on three 3.5" disks. Price: £7.50

### Emul #2

Spectrum emulator for users of the Amiga. Comes on one 3.5" disk. Price: £2.50

## HOW TO ORDER

Ordering software from the S&SC PD Library is easy. Just fill in the form below and we'll mail your software to you just as soon as we can.

## PRICES

We've tried to keep costs down to a minimum so that we can offer you these tapes and discs at very low prices. Therefore, apart from the emulator software which is already priced, you can obtain the PD as follows:

Spectrum 48/128/+2(A) tape - £1.70 each    Spectrum +3 disc - £2.70 each

### S&SC PD Library Order Form

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# SAM Coupé Demo

*Brent Stevens of the SCPDSA gives you his monthly round-up of all that's new in the world of SAM Coupé PD software ...*

The support for the SCPDSA has been incredible in the few short months that it has been trading. Well wishes have been received from many subscribers, and the support continues to grow daily, with mail bulging through the letterbox.

There have been no signs of the demand slackening either.

Subscription rates are lower than when we started, mainly because almost every active Coupé user in the world has now subscribed, but the volume is being maintained with a continued increase in the orders for the software.

Well over 1600 (last count) actual orders have been received and processed, and the future certainly looks very good, with more and more orders and subscriptions every day.

For those wondering what the SCPDSA subscription actually consists of, then here's your answer. There are 3 issues, sent quarterly, each with a new update on all the PD for your Coupé, and of course a free demo disk. It is hoped that a new demo disk can be produced every year, for subscription renewal, and old demo disks made available as PD disks. Details of subscription further on.

From next month on, I will be giving order codes to software items already reviewed, and for new items.

There's been quite a bit of new software produced lately. Firstly, I

will start with SAM Disk.

There has been 3 issues of SAM Disk magazine produced. Each one is very well presented, with incredible original artwork, and rumour has it, that the same artist, Steven "Pickasso" Pick is working on the cover of issue 2 of SAMsational Software, due out early to mid July. Each issue has been as SCPDSA AWARD WINNER, and by the looks of this latest issue, it only gets better. Perhaps I should create Mega awards, or Super Incredible Unbeatable awards.

Enough of that! SAM Disk issue 3 has got a collection of some of the best colourful SAM artwork around. There's a mix of utilities, and demos, and also the occasional font, ready to load up and use. The disk is well presented throughout, and also features a comprehensive mailing list of software and hardware producers for the SAM. A magazine section is also included, with news and reviews on the latest bytes around.

Rellon, the producers of the high quality award winning utility and magazine disk, Encelladus, have now altered the format slightly, making it a magazine disk, with the latest news, letters, and tips for your Coupé. But if you are not into magazine disks, don't despair. There is still the good mix of high quality demos, and utilities, just waiting to be loaded up and tried out. Indeed, utilities galore are available here, with a very impressive Roman font,

# Public Domain

of which the letters are about an inch wide on my 14 inch monitor, and well defined as well.

There's part of the Star Wars screen demo from Fastline, as well as a larger editorial section. Encelladus is going towards the magazine side of things, and this issue is classified as a magazine disk, rather than a utility disk, although there is still a good mix of original utilities available.

New issues are produced every 2-3 months, and so far, there has been no compromise in the quality. The standards have been maintained throughout, and is the second best selling PD disk around. Probably the highest quality though.

What is the best selling disk I suppose you are all wondering. Well the answer to that one is FRED. I lost £50.00 a few weeks back, when I bet out of the next 100 orders, at least one of the orders wouldn't have a FRED disk. Obviously I was wrong.

There are several reasons why FRED is so popular. There are some very good demos popping up every few issues, and quite a few simple but very well written utilities, programs, etc. But the magazine part is outstanding, and the new(ish) Machine Code tutorial has picked up quite a following, taking the complete novice through the bits and bytes of the Coupé, and gaining an understanding of how to handle the op-codes to success. It is

actually an assembly language, but no one has complained so far.

This disk is monthly, and keeps you informed with the latest news and reviews, tips and programs. Issue 9 and 10 are both new.

Issue 9 has a good mix of well written BASIC games, and over 1000 POKEs, for use on your emulated Spectrum software. The chances are that there are not many titles that have been left out. The ever popular Machine Code tutorial also keeps its regular slot, and all together, the disk is an SCPDSA AWARD WINNER.

The Encounters series comes to light on issues 9 and 10, with the "cute" (I didn't quote it) alien, Zebedee Green. Although some may find this demo to be completely mad, it makes good use of PUTting sprite images on screen, with masks, so examining the listing could prove useful for those who wish to tamper with programming.

FRED issue 10 is yet another winning. A further 500 POKEs are listed. The machine code tutorial is continued (should this eventually be compiled to form a book?), and further demos, are given. There is a demo special on this issue. This is the Tweety demo from Holland. It features incredible music, with a background of an Iraqi Eagle, and a scrolling jumping message while the tune plays. The tune, although brilliantly written, is a little short, and as it loops around, be warned of it

making you go mad, but what have you got to lose for only £1.00?

The Masters of Magic have made a breakthrough with their SAM BASIC game, No Way Back. This is a faster version of the game, with more in the way of new levels, and colourful graphics. The story behind this right to left scrolling shoot-'em-up, is that everyone on Earth had been wiped out by some robot force, and you have to shoot them all and get even. It's the usual type of storyline, but the game is very good, and recommended. You would find it very difficult to believe No Way Back has been written in BASIC, especially with the incredible 6-channel intro music.

Since Blue Alpha launched the sound SAMpler (Audio Digitiser), the Masters of Magic have been working with digitised sound tracks, developing the equivalent of a 24-bit sample. The Archimedes can only reproduce 16-bit digitised sound, so when you hear this, you'll be in for quite a surprise. Even the domes on Blink Disk 3, which were considered to have been almost real, used only 4-bits, so look out next month, for the low down on this praised sample.

Also available is the best of FRED, and two demo disks mainly full of Atari ST screens. Worth getting.

The Masters of Magic are also responsible for the new SAMCO demo, bundled in with all new Coupes. This is available free from

# Software Association



SAMCO if you place an order with them, or from The Masters of Magic. Guy Middleton has come up with another smashing animated demo. This time, in the form of The Terminator (with Arnie Schwarzenegger). Four scenes are given, each with around 100 frames, all at once. This is the longest lasting animated demo, as each frame had been compressed, and is decompressed on viewing.

As it uses MODE 4 graphics for the demo, the quality is outstanding, and I would consider this to be the best animated film demo so far.

Fastline's software production side arm, Varion Graphics has produced some pretty amazing animated demos. There are many more stills, all in MODE 4, but less and shorter animations. A Tron demo is promised for the near future, so if I get it by next month, I will give it a full review.

Your comments about this column and PD software are always welcome, so if you wish to write in, feel free to do so to the SCPDSA at the address below. If you have any enquiries, address them to Hannah Nieuwoudt.

SCPDSA  
42 Eaton Drive  
Kingston upon Thames  
Surrey  
KT2 7QT,  
Great Britain.

If you want to become part of the PD experience, subscribe now to the SCPDSA, using the form provided below.

You also need to enclose a cheque/PO payable to SCPDSA, for £2.00, for the subscription. Note : overseas handling charges - EEC add £1.00, Rest of World add £1.50.

You can use the form whenever you wish, as the offer holds until January 1992 (the price may have to go up then).

You should get the demo disk and catalogue within a week, but just in case we are flooded by mail, please allow 28 days for delivery.

Subscriptions received from June 1 onwards, will start with issue 2 of SAMsational Software.

Watch this space next month for a small competition!

Brent Stevens.

### SCPDSA SUBSCRIPTION FORM

I wish to find out more about PD software for my SAM, so send the FREE demo disk, and catalogue, as soon as possible. I have enclosed my payment for £2.00\*.

My Name is : \_\_\_\_\_

My Address is : \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

And my Postcode is : \_\_\_\_\_

Signed : \_\_\_\_\_

\* NOTE : EEC add £1.00, Rest of World add £1.50

# SAM PD NEWS

# GM-BASE

## A database for the SAM Coupé

As the name suggests, GM-BASE is a database program. The latest version of the software V2.0 is the version we have reviewed and contains a number of enhancements over the previous version 1.1.

Upon loading GM-Base you are presented with the main options screen, displayed in Mode 3 which is used throughout the program.

From here you have the following options: create, load, edit, save, copy, erase name, and print. Each can be selected by using the left and right cursor keys to highlight it and pressing Return to select it.

**Create**  
This allows a new database to be created. Your database may have 10 fields each of a maximum of 40 characters length, with the field names being a maximum of 8 characters long.

Once you have defined the names and length for all the fields you require, you are told the maximum amount of records you can store with that configuration. This is the major drawback of GM-Base, in that it stores all the database's information in memory, and although it takes advantage of a 512K memory capacity if you use one, it doesn't recognise extra 1Mbit memory modules.

To do a quick test to see what size of database I could set up given a standard usage, therefore, I created a database with name, street, town and county fields of 40 character length, a postcode field of 10 characters and a telephone field of 15 characters. In a 256K machine this allows you a maximum of 639 records in your database.

For this particular application, i.e. names and addresses, not many people would need more than about 100 records, however for other applications these kind of restrictions would come into play all too often.

### Load

This option allows a previously created database to be restored to memory. A demonstration database is included on the GM-Base disk which contains names and address of a few companies and individuals producing SAM software.

### Edit

This is where you can view a database, sort information, search for a specific record, etc. The screen contains the current record along with a couple of lines at the bottom of the screen telling

you which keys do which functions.

The database records can be looked through using the left and right cursor keys to progress one record at a time. You can also jump to the first or last record in the database or to a specific record number.

A record can be edited, or a new record created. These two functions are done by simply typing in the new data for each field.

A database can be sorted on any key field in alphabetic or numeric ascending or descending order, so after entering names and address in in a random order, you can get GM-Base to put them into

order for you. As the program is written in Basic, the sort function can take some time to finish if you have a large database.

The search function enables you to search the database. You simply type in the string you wish to search for and the field in which it will be found, and GM-Base does the rest. Once it has made a match, it displays that record on the screen. Using the 'search from' facility enables it to continue the search and try to find another match.

Individual records can be printed out from the Edit mode too, which is useful while you are using the search option.

### Save

The save option will simply update the disk file of the database with the one

## VERDICT

SAM Coupé

✓ Perfect for 'card index' type applications  
✓ Relatively cheap

✗ Limited storage capacity  
✗ Slow sort function  
✗ Screen/printer output not configurable

69%



stored in memory.

#### Copy

This allows you to make a duplicate copy of the database files using a different filename.

#### Erase

This erases the database files of the current database in memory from disk. The copy of the database in the computer's memory is kept intact though.

#### Rename

This allows you to change the name of your database.

#### Print

With this option you can print out individual records or a sequence of records to a printer. There is a variety of print styles which can be used which are as follows: Pica, NLQ or Compressed; all in either draft or emphasised print.

All in all, GM-Base is perfectly competent at all that it does. The only limitation being that if you need to create a large database, or require facilities such as the ability to tailor output to the screen, then you will find GM-Base hard pressed to meet your requirements.

The program is ideally suited to applications such as name and address management, or other 'card index' type applications. Priced at £7.95 its not too expensive for this kind of thing either.

I suspect that version 2 of GM-Base was written after user feedback of version 1.1. I hope that the package is further developed to include such things as file based storage, user configurable screen display and faster general operation.

GM-Base is available for £7.95 from:

**GM Software,**  
48 Main Road,  
Crynant,  
Neath,  
West Glamorgan,  
SA10 8NP.

### SAMTAPE 3+4

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THIS MONTHS VOUCHER

# Advice Line

*The most comprehensive user helpline available to Spectrum, SAM and QL users.*

## What we offer ...

Most people will at some point encounter some problem, whether it be software or hardware related, which they can't solve. This is of course extremely infuriating, especially when the manual you have doesn't help at all.

That's where Advice Line comes in. Our team of experts is at hand to answer all your questions ... however complex they are. The Advice Line service is also extremely speedy, which eliminates the long delay you would experience writing to other magazines.

The popularity of Advice Line after only one month or so has prompted us to add another method of contacting us with your questions.

### By telephone

The telephone service should be your first contact with us with your query. Hopefully, we will be able to sort it out there and then.

### By modem

Subscribers to Prestel and Micronet can also get in contact with us with their queries. Just mailbox our account (582472067) with your question giving as much detail as possible and all being well we should have an answer to your question mailboxed back to you within 72 hours.

### By post

It is sometimes the case that we can help you solve the problem over the phone or by e-mail. For example, if you have a program which you cannot get to work or a monitor with non-standard connections; the only way we are going to be able to help you is if you provide us with information like data sheets, listings, etc.

This is where you should use our postal service. We've taken a leaf out of the book of BBC Acorn User magazine by a guaranteed fast service. In S&SC's case, we guarantee to answer your question within 12 working days of us receiving it - however complex your question is.

Not only is the service fast, but it's also very comprehensive - the answer to your question will be a detailed (but not jargon-ridden) word-processed containing any diagrams or listings that we feel you require. We will also, of course, return any material which you have sent to help us.

In order to operate this fast service and employ only the most knowledgeable experts, we are charging a minimal amount of £1.75 to cover administrative costs and postage (i.e. you don't need to enclose an SAE).

Our guarantee is that if we can't get the answer to your question to you within 12 working days or we can't answer your question, then we'll refund your money in full. A further guarantee is that if after receiving our reply you're still 'none the wiser', then we'll rewrite our reply so that you can understand it more fully.

In short, you can't lose and for your £1.75 you are getting an extremely fast and professional service.

## TELEPHONE ADVICE LINE

If you can, please use the telephone service because we may be able to answer your question straight away.

When you call, please have all the relevant information in front of you. It may also be an idea to sit in front of your computer when you call with any relevant software already loaded.

The telephone advice line is in operation at the following times:

Mondays, Wednesdays, Thursdays and Fridays from 2pm until 5pm.

## Postal Advice Line

To use the postal service, clearly describe your problem and fill out the form below in BLOCK CAPITALS.

Send these, and photocopies of all information you think will help us to answer the question.

We have recruited experts which cover all aspects of Spectrum, SAM and QL use, as well as people who can answer more general questions such as those relating to languages like "C" and Pascal.

## QL Users

QL owning readers will be pleased to know that we are now able to cope with the vast majority of QL enquiries. This extends to the telephone and modem service. A full postal service for QL users will be available in time for next issue.

## Advice Line

If you have a problem with a Spectrum or a SAM Coupé, a piece of commercial software, some hardware or a program you are trying to write then Sinclair & SAM Computing is at hand to help. The Advice Line guarantees that we will answer your question within 12 working days for just £1.75.

If we fail to do this your cheque or postal order will be returned with our answer to your question - you can't lose!

If you feel our answer is written in a too technical manner (i.e. you can't understand what the Dickens we're on about!) then we'll be happy to rewrite it for no extra charge so that it explains it more fully.

Please note that asking to debug your programs could be complex and we can't guarantee that we can offer a full solution.

## Sinclair & SAM Computing Advice Line

Name \_\_\_\_\_

Address \_\_\_\_\_

Daytime Telephone Number \_\_\_\_\_

Send this form, your question, all relevant materials and a cheque/PO made payable to Garner Designs to:

Garner Designs, 57 Lovers Walk, Dunstable,  
Bedfordshire, LU5 4BG.



# Advice Line Answers

Each month we print some of the questions we have answered which we receive in the previous month.

Hopefully you'll see one which will help you out without even having to contact us for help.

## Help! Corrupted disks

I occasionally experience disks becoming corrupted on my SAM. It usually wrecks the contents. What am I doing wrong?

**Caller did not leave his name.**

*It transpired that the user had been leaving the disk in the drive while he turned the computer off, or reset it. While this does not guarantee a disk gets corrupted, it does increase the chances. I think it is just a peculiarity of the SAM as most other computers don't get the same problem.*

To help reduce disk corruption even further, make sure you don't do the following. Store your disks near strongly magnetised areas such as televisions, power supply units, telephones, etc. Make sure that they are not kept in a dusty environment and never allow anything to touch the disk's surface (other than the disk drive of course).

These safeguards are applicable to all disk users, not just SAM users. However, one more thing SAM users should do if disk corruption or general bad behaviour of the disk continues, is to unplug the disk drive from the case (make sure the power is disconnected), and then plug it back it firmly. If problems still continue, it may be the type of disk you are using. Cheap unbranded disks are prone to errors, even ones with a 'lifetime' guarantee - try and contact the manufacturers in Taiwan! Branded disks such as Sony or TDK are the best, but cost more though.

If problems still get no better, it may be the disk drive or the computer at fault so contact the manufacturer, in our caller's case, contact SAMCO on 0792 700300.

## DTP Problems

I've bought a copy of PCG Software's desktop publishing software for the Spectrum some months ago on the recommendation of a review. However, what the review didn't mention was the program is a devil to understand. Am I the only user in this situation? Any help on using the software would be appreciated?

**Mr Reynolds, Bury**

*Although the software is a powerful tool once you get used to its unhelpful keyboard controls, many people find the learning curve of exploring all the features very long-winded, prohibitively so in some cases. We've come across a significant number of users in the same situation over the past six months or so, and although going into detail about how to best use the program would take up more space than we have, but we've giving away a booklet with issue 3 of Sinclair & SAM Computing called The DTP Guide which will tell you everything you need to know.*

## HiSoft BASIC problems

I've written a BASIC program which I have attempted to compile using HiSoft BASIC. However, although it doesn't produce any compilation errors, when I run the compiled program, it does not operate correctly.

Although I've managed to track the problem down to some DATA statements in the program, I cannot understand exactly what is going wrong as DATA statements seem to compile okay in other programs. Can you find the problem for me?

**J.Duncan, Glasgow**

*Although the program you supplied was not complete, it is the format of your DATA statements which are causing the problem. At the moment, they are in the form:*

*100 DATA 50.46.46: DATA 3.56.38: DATA 4.4.12 ... etc*

*This is presumably for readability purposes as all of the data items are read into an array.*

*If you change the above statement to:*

*100 DATA 50.46.46.3.56.58.4.4.12*

*then you will get no compilation errors. If you still wish to preserve the readability of the data statement, then change it to the following:*

*100 DATA 50.46.46. 3.56.38. 4.4.12*

## CONTENTS ISSUE #2

### SMALL 'C'

A version of the C language for CP/M users on the Spectrum +3.

### ZSM

A great CP/M based assembler.  
Powerful features.

### EMULATOR

Excellent Spectrum emulator for SAM Coupé users.

### CLIP ART

More clip art from Garner Designs' range to tickle your fancy.

### Spectrum Utilities

A set of programming utilities designed to make your programs more professional.

# S&SC Extra

The monthly tape and disk for Spectrum and SAM Coupé users

**S&SC Extra** is the perfect companion to Sinclair & SAM COmputing. Each month it contains a whole host of programs for you to use and enjoy.

Where there is a listing to type in from the magazine, we'll save you the finger work by including it on S&SC Extra.

Coming in tape versions for the Spetcurm and disk versions for the SAM Coupé and Spectrum +3, its a must for everybody serious about their computer.

## Small 'C'

Spectrum +3 with CP/M only

This version of C will enable CP/M users with a Spectrum +3 to keep track of our programming tutorial series which started in this issue.

As its name suggest, Small C is not a complete implmentation of the C language, it is still good and for programming practice it is excellent.

Full documentation is given on the disc in the ZSC.DOC file, which can be printed out to provide a comprehensive guide to using the program.

### LOADING INSTRUCTIONS

Files: ZSC.COM, ZSC.DOC, AMLOAD.C, AMLOAD.COM, AMS.DOC, AMS.LIB, CCO.SUB, OPT.C, OPT.COM, ZSC1.C, ZSC2.C, ZSCC.LIB, CONIO2.LIB, CRC.CRC, CRUN2.LIB, CRUNLONE.LIB, FILE2.LIB, FORMAT.LIB, MORELIB.LIB, NUMIO2.LIB, STRING.LIB

Exeecuteable file: ZSC.COM

## ZSM

Spectrum +3 with CP/M only

ZSM is the standard CP/M assembler for Spectrum +3's with CP/M.

ZSM is a disk-based assembler, i.e. it takes assembly source code from disk and then assembles it to machine code and stores the resulting file back on the disk. Therefore, a text editor needs to be used in association with ZSM in order to create the source code.

Full documentation is provided in the

ZSM.DOC file which is a meaty 28K manual which can be printed out

### LOADING INSTRUCTIONS

Files: ZSM.COM, ZSM.DOC

Executable file: ZSM.COM



## SPECTRUM EMULATOR

SAM Coupé only

**Spectrum Emulator** is a freeware program containing some of the features of the commercial Spectrum emulators for the SAM.

The first thing to note is that you need access to a Spectrum in order to copy its ROM code to your SAM. To do this, go into Spectrum Basic and type:

**SAVE "48kROM" CODE 0,16384**

(On a +3/+2A remember to type: **SAVE "T:"** first to make the default device the tape).

Now reload the 48KROM file into the SAM with the command:

**DEVICE T: LOAD "48KROM" CODE 30000**

Once it has loaded, insert your S&SC Extra disk into the drive and type:

**DEVICE D: SAVE "48KROM" CODE 30000,16384**

The Spectrum Emulator is now ready to use!

Type **LOAD "UTILITY"** to load it.

Upon loading, you are presented with an options screen containing the following options:

- Game - Enter Spectrum mode
- Pokes - Enter game POKes
- Save - Save Spectrum game (to disk)
- Load - Re-load Spectrum game (from disk)
- Device - Change device (change disk drives)
- File - File Directory (see directory of the disk)
- Reset - Cause the Spectrum mode to reset, clearing the Spectrum memory
- Verify - Turn verification on or off
- I - Turn interrupts either on or off
- M - Select the mode of operation for interrupts (its best to keep it in Auto)
- A - RAM save (save contents of Spectrum memory into the SAM's memory)
- O - RAM load (restore Spectrum memory with the contents of a previous RAM save)

The emulation itself is very good, however if you plan on doing any work with Basic, you'd better get hold of a keyboard map because keys such as the ESC key and DELETE key aren't mapped so that they work.

However, for loading and playing Spectrum games, the emulation is great. And by pressing the NMI button on the SAM you are returned to the main options screen as detailed above, thus allowing you to save Spectrum games to SAM disk - a very useful feature indeed.

### LOADING INSTRUCTIONS

Files: UTILITY, UTILCODE, SPECNMI, SPECNMI2, SPECSPARE

Load with: **LOAD "UTILITY"**

## CLIP ART

All Spectrums & SAM

Just like the last issue of clip art.

S&SC Extra, we've included a selection of clip art for Spectrum and SAM users.

Clip art really seems to be catching on at the moment, so you should find this selection very useful.

### INSTRUCTIONS

Files: CLIP.1 ... CLIP.5, CLIP.BAS

*Loading instructions:*

The **CLIP.BAS** file is a viewer utility which allows you to look at the

The clip art files themselves are standard CODE files which can be loaded straight into Spectrum art packages such as Artist 2 or Art Studio, or SAM packages such as Flash or the PCG DTP Pack.

SAM users should note that the files are MODE 1 files, i.e. 6912 bytes long.

## SPECTRUM UTILITIES

All Spectrums

This set of utilities is ideal for Spectrum programmers. The set comprises of the following programs:

- BASIC Compressor - this squeezes your BASIC program up to give you extra memory in which to work
- Mouse Pointer Routine - a must for all users of the Genius/Kempston mouse system. Add a professional pointer to your programs making them more user friendly
- Character Sets - a collection of character sets to replace the boring built-in one
- AutoSecureIt - protect your programs from prying eyes

Full instructions are given in the individual programs. However, general information is given in the main loader for these utilities, which can be loaded using:

LOAD "UTILLOAD"

## Using S&SC Extra

### Spectrum +3 disk

For the two CP/M programs, remember that CP/M first needs to be loaded before the programs will work.

For the other programs, consult the loading instructions as described on the previous pages.

### SAM Coupé disk

A menu program has been provided which is automatically loaded when you press F9 to boot the disk. The menu program can also be used on your own disks (just copy it to the required disk).

### Spectrum tape

An information sheet accompanies each copy of S&SC Extra on Spectrum tape which contains the 'running order' of the programs on the tape.

## BACKING UP YOUR DISK

It is essential that Spectrum +3 and SAM Coupé users back up their disks straight away in case it becomes corrupted in the future.

On both the disk versions we have placed a program called 'CLONE.BAS' which will automate the disk back-up procedure.

Just type:  
LOAD "CLONE.BAS"

## FAULTY TAPE/DISK?

Although we do our utmost to ensure that your tape/disk works correctly, occasionally a disk may become corrupted.

If you cannot get your to work, then please send it back to us for a free replacement. Send it to:

Garner Designs,  
57 Lovers Walk, Dunstable,  
Beds, LU5 4BG.

## S&SC Extra Order Form

Name \_\_\_\_\_

Address \_\_\_\_\_

### PLEASE TICK THE VERSION YOU REQUIRE:

Spectrum tape (£1.95) \_\_\_\_\_ Spectrum +3 disk (£3.00) \_\_\_\_\_ SAM Coupé disk (£2.20) \_\_\_\_\_

I enclose a cheque/postal order made payable to *Garner Designs* for £ \_\_\_\_\_

Please fill out this form in BLOCK CAPITALS:

Send this form and paymane to: Garner Designs, 57 Lovers Walk, Dunstable, Beds, LU5 4BG.



# FLEXIPAGE

*We review the latest SAM Coupé version of Flexibase's Flexipage authoring system ...*

Of the serious software that's been available for the Spectrum, Flexipage must be considered a veteran. Since its launch for the Spectrum, its author, David Wornham has employed a policy of continued development to eventually bring the program to where it is today.

Its latest incarnation is on the SAM. Although there has been a SAM version available for some time, Flexipage has been relaunched for the SAM to include a new manual. There are now two manuals, one for the Spectrum version and one for the SAM version of the program. This eliminates the confusion which the manual produced before by catering for two versions of the program.

The latest software update to the SAM version is support of MasterDOS's ram disk facility for more on-line storage. Support for 1Mb+ SAMs via MasterDOS is also in the works.

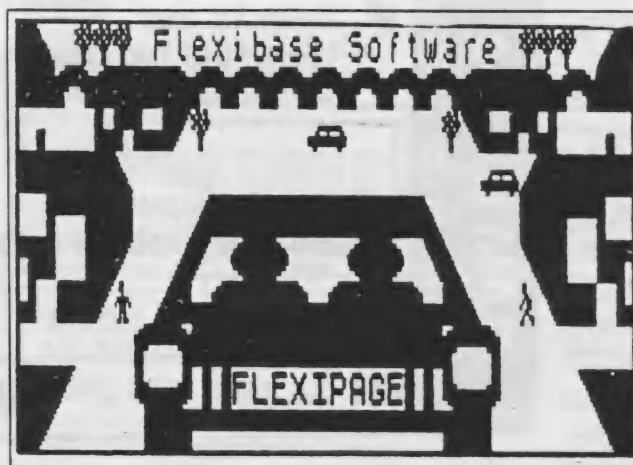
The program itself is an authoring

system which allows you to create what amounts to your own programs, displays or automatic sequences for a range of different applications. The beauty of Flexipage is that it requires no programming knowledge to write your own programs. The only thing you need is a little imagination.

Each creation consists of a number of pages (upto 200) which can contain high-resolution SCREEN\$ or low-res UDG-type graphics and text. Your Flexipage creations come in three categories.

Firstly, there is 'free' format which allows the user to dip into your database of pages as he wishes. Each page is accessed simply and easily by entering the page's number and then pressing ENTER.

'Interactive' format allows you to create an interactive exercise which can have upto three



choices on each page which allows the flow through the exercise to branch. Thus the pages take on a hierarchical tree structure.

'Automatic' format is used for applications such as advertisements and displays. This format will display a continuous sequence of pages until stopped.

These different formats practically make Flexipage limitless in what you can create with it. Its this open-ended nature of Flexipage which makes the program so appealing to use for a multitude of applications.

The SAM version of Flexipage allows upto 200 pages to be created consisting of text and UDG graphics creating using Flexipage's functions. SCREEN\$ pages can also be included into your creations, and freely mixed in with the normal style of pages.

Each page is a full screen-width wide and half a screen deep. Although this may seem a bit limiting, you are add to 'add' one page to another so that the first page is displayed in the top half of the screen and another page is displayed in the bottom half, thus building up a complete screen-sized page.

While adding text or UDGs to a page, it is clear that the system can be compared to a Viewdata system. You can have single or double height characters, enabling you have 10 or 5 lines of text on a page respectively. Due to the blocky nature of UDG's, they do not allow your artistic talents to take shape on the screen. However, they provide a

functional way of adding interest to otherwise bland text. Control codes can also be added to a page which have control of a range of things such as pen and paper colours, the page to branch to in an interactive exercise, whether a sound effect is played when the page is accessed and increase a 'score' counter which can be implemented in games created with Flexipage. The method of entering text and UDG's onto the page is very easy and straight-forward.

In order to get really professional displays, you really need to use the program's ability to incorporate SCREEN\$ files. These can of course be designed within FLASH, or using Flexipage's own built-in features. These are however, somewhat limited and you can only use MODE 1 graphics.

Flexipage's open-ended nature is again reinforced with the program's ability to load in each blocks of pages during an exercise, thus increasing the maximum ceiling of 200 pages available to a number which is

virtually unlimited.

Flexipage comes with several examples of its uses and how to best employ the various features of the program. One of these, 'Crime Quiz', is an interactive exercise designed to increase crime awareness and shows of how to incorporate branching, UDG graphics, SCREEN\$ and scoring into exercises.

Another example given is an automatic format exercise which displays advertisements from several Spectrum and SAM supporting companies.

Together with the manual and the example exercises it is very easy to get to grips with Flexipage. The manual is A5 sized and is very meaty! Although the information within it is set out rather strangely, the contents list or the excellent index enables any piece of information to be found extremely quickly. Also included with the manual are planning sheets which are very useful in planning an exercise in a structured manner.

VERDICT

SAM Coupé

Also available for the Spectrum

✓ Extremely open-ended

Easy to use

Ideal tool for creating educational games

Detailed manual

X Can be slow

Not very robust - program can be halted using ESC key.

79%



The whole program works very well with the menus and confirmations of all your actions making it very user friendly. The only thing that makes the program 'hostile' to the user is the fact that the program can be stopped using the ESC key, and although it tells you how to restart the program without wiping all the variables etc. its usually after you've accidentally typed RUN to restart the program that you realise that you shouldn't have done it - thus wrecking your work, unless you have been saving regularly to disc. Apart from that, the program hangs together very well.

Printers are supported with printouts available of individual, or a set of pages, and SCREEN\$ pages.

As well as being able to test your creations within the main Flexipage program, a supplied 'Read Only' version of Flexipage is supplied which enables you to create stand-alone applications. The Read Only program enables a user to use your exercise, but not alter it.

In summary, Flexipage is an excellent program for those users who want to create simple programs without having to learn a programming language first. Its suitability as a tool to create educational tools for youngsters is unparalleled, in fact its absolutely essential!

Its also useful in creating rolling demonstrations, an application which is more than adequately shown off with the advertisement application given away with Flexipage.

# This is FLEXIPAGE



Flexipage's cost is also a good buying point. Although £15 sounds a lot, you do get a lot for your money. The manual and program alone are worth this, but in the knowledge that the program is continually being improved by the author and that updates are available free of charge will make the £15 more of an investment and although you may not immediately think of a use for Flexipage, you'll soon find one where programming something similar in Basic would be too time consuming.

The Copier is a program for, as its name suggests, copying files, but in a far improved way to the Basic COPY in the +D (wherever +D is mentioned this also includes Disciple from now on).

The Copier is supplied on tape and contains a Basic program, the main code file and a graphics file. Upon initial loading, the files are automatically transferred to disk. The only requirement that The Copier makes is that the latest DOS version is in use, i.e. 2a on the +D or 3d on the Disciple.

Instructions are on a couple of A4 sheets but provide all the information needed to use the program.

Having now got a working copy of the program on a disk does it do over and above the +D COPY? Well, firstly it does not reset the Spectrum each time a copy is completed. Secondly it will copy all the files that the +D (and some other programs) will not, i.e. snapshot, Opentype, etc, in fact 128K snapshots can even be copied using a 48K machine.

In 128K mode however, the extra memory available is utilised to speed up copying somewhat by transferring larger blocks of code at a time.

As +D users will know, when a complete directory is being copied with the "\*" wildcard, should a corrupt program or sector be encountered everything comes to a grinding halt. It is not possible to then start again with the next file and carry on.

In this situation, The Copier informs you of the error and asks if you wish to retry. If this again fails then answering "NO" to "retry?" goes onto the next file and carries on.

Upon loading the program, you are presented with a colourful screen containing 2 windows for file information, a window for prompts, reports, and a running commentary of what the program is doing when handling files. A section of screen permanently displays a menu and lastly at the top of the screen is the program title and drive and selected file status.

Reading this could give an impression of clutter. This is not the case. Far from it, this single screen provides a clear display of information on both colour and w/ monitor/TV as well as a complete lack of having to call up menus and constant screen changing is a pleasure to use. The method of selecting files

# The Copier

**M.Perry** reviews *The Copier*, a disk utility for the Disciple and +D disk interfaces.

also makes for a very easy and user friendly interaction with the program.

Firstly, the SOURCE drive must be selected and the directory is loaded into the program. The DESTINATION drive is then selected and again the directory is read. If you are using a single drive, then disk changes are fully prompted.

The current window with source or destination directory is shown in BRIGHT and the directory listing is scrolled past a bar with the cursor keys. Single files are selected by pressing "O" when the name is in the bar and selected files are changed to inverted video. Alternatively, pressing "S" will select the whole directory.

Once the files to be copied have been selected, pressing "C" will start the copying process.

While this is happening, you are told which file is currently being copied as well as any error reports and with single drive usage when to change disk.

At the completion of the copy you are told how many files have been copied and how many (if any) failed. A prompt "Clear copied files" then reads the destination directory and changes those that have been copied in the source list back to normal video. Those that did not successfully copy remain inverted so are easily recognisable.

To rename a file, all that is needed to to

use the cursor keys until the file is under the bar and then by pressing "R" you are prompted for the name to rename the file to. The file will then be renamed. As with the copy operation, there is a "retry?" option if for example the disk is write protected, so you can rectify the fault and then re-execute the command.

The erase file(s) option works in the same way as the copy command, i.e. either individual files or the entire disc.

For anyone that is frequently handling files, backing up disks, moving files around or tidying up disks with a lot of "bits and pieces" of programs accumulated during program development, rearranging and sort your word-processor files into some sort of order, or simply have a lot of files that the +D DOS refuses to copy, then this program is a must.

Having now used the program for some time I have not had cause to complain or found any problems.

**The Copier** is available from:

Shimon Young,  
21 Colchester Road,  
Southend-on-Sea,  
Essex,  
SS2 6HW.

Price: £6.00



# SC\_FILER

## SAM Coupé Database

**£10.00  
DISC ONLY**

Massive capacity filing program. 256K version stores 128K of data —512K version stores 384K—in continuous memory, store more with External Ram modules, upto 4.4Mb. Data is compressed to allow maximum record storage. Random, rather than fixed, fields for greatest flexibility. Screen mode 3 used to display records. You define fields on screen wherever you want them, using windows. Line drawing and colours available to enhance the display. Choose from a range of different character sets.

You decide which field is to be used for sorting, and the records are automatically filed in order as you add them. Add, edit, amend, make printed copies. There is a buffer search facility to help you find the records you want to display. Includes routines to allow you to convert files from Lerm Address Manager and GM Base for use with SC\_FILER. Comes with a demonstration database which records all the Z80 machine code instructions, their operation, effect on flags, etc.

# SC\_ASSEMBLER 512K 256K

**£12.50  
DISC ONLY**

NOW BOTH PROGRAMS ON ONE DISC, WITH PROFESSIONALLY WRITTEN MANUAL

Powerful 64 col. full screen Editor/Assembler, using no SAM ROM, so compatible with all versions. Disassembler included—Monitor to come in future upgrades. Screen mode 3 uses one of 32 Editor character sets—choose the one you find easiest to read. Recognises the standard opcodes and pseudo-opcodes and 102 undocumented codes. User friendly. Clear error messages—words, not codes. Automatic tabbing. 14-character labels. Hex or decimal

input and listing. Search facility. List source code to screen or printer. Two-pass assembler, with or without listing to screen or printer, displays code start and end addresses and length on pass 1. Source files to get you started. Easy enough for the beginner, sophisticated enough for the expert. Now includes converter to allow Lerm Assembler source code to be used with SC\_ASSEMBLER. Still includes the FREE Spectrum Emulator: SC\_SPECONE

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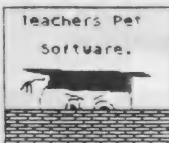
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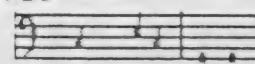
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# Emulator Spot

The *Emulator Spot* column is aimed at those users who are either using a computer to emulate the Spectrum or QL, or a SAM or QL to emulate another computer.

The column will also provide coverage of CP/M for users of the Spectrum +3 and QL.

In the first edition, we review a QL emulator for the Commodore Amiga ...

The Commodore Amiga is not only the fastest selling computer at the moment, but is also getting a reputation as a great machine for emulating other computers.

At present, the Amiga is able to emulate the Apple Macintosh, IBM PC, Atari ST, Commodore 64, Spectrum and QL. The amazing thing about these emulators is that some of them run completely in software. The Commodore 64, Spectrum, and Sinclair QL emulators are such emulators. What's even more amazing about these three particular emulators is that they are all PD, costing little more than the price of a disk.

The later two are the ones we will be dealing with, starting this month with a review of the QL Emulator.

The QL is much closer to the internals than many people think. The QL's main processor is a 68008, which is a subset

of the 68k processor family, of which the 68000 is used in the Amiga. However, this does not make the task of writing an emulator any easier. But, the writers of QL Emulator, United Graphic Artists have certainly succeeded.

The emulator comes on a set of three disks containing the emulator program and support programs enabling the software to be run on unexpanded Amiga 500s, 1Mb Amiga 500s, 1Mb Chip RAM Amigas and Amiga 2000s. I tested the emulator on a 1Mb Amiga 500.

Upon running the emulator you are presented with the familiar black screen and red cursor at the bottom. I must admit that I hadn't used a QL for some time before trying this emulator, and the black screen and cursor gives a definite 'home sweet home' feeling!

One thing that will immediately strike

people familiar with the QL is that the usual monitor/TV mode selection panel is not displayed when you load the emulator. Instead, you are automatically put into the equivalent of the monitor mode to take advantage of the Amiga's resolution.

However, having said that, the QL's two resolutions, the four colour Mode 8 and eight colour Mode 4, 512x256 pixels and 256x256 pixels respectively and emulated pixel for pixel on the Amiga's screen.

Because the Amiga has a 640 pixel width, there is a gap on the right hand side of the screen which may cause nuisance to those used to working with a wide screen on an actual QL. However, it will be change for QL users with TV's who find the edges of the screen cut off when trying to you programs designed for the monitor mode.

The emulator emulates the four colours of Mode 8 exactly, but the four extra colours of Mode 4 are reproduced as colour stipples of the Mode 8 colours. Again, a little annoying to users of the 'real' QL.

As Amiga users will know all too well, AmigaBASIC is good, but not brilliant. Where AmigaBASIC lacks, the built-in QL Basic, called SuperBasic, more than makes up for. It features some excellent program flow structures which leaving AmigaBASIC for dead. There is no doubt that SuperBasic was very advanced for its time, and still is excellent by today's standards. However, for Amiga users the QL's user interface is a culture shock. Writing and subsequently editing a program can be quite long winded. Especially when you're used to doing everything using a windowing environment. Another culture shock is having to use line numbers for each line in a Basic program. In these times of labelling blocks of Basic code, SuperBasic seems ancient, but its wealth of features makes up for it.

The QL Emulator has to be congratulated for recreating so much of the SuperBasic language. Only a few commands are not implemented, such as the sound commands.

The most distinctive thing about the QL has to be its microdrives. Thankfully, nowadays most QL software comes on disk and the universally accepted drive specifiers are FLP1\_ and FLP2\_. The QL Emulator has these built in as standard, and gives no support to the microdrive drive specifiers MDV0\_ and MDV1\_.

The QL Emulator's attempt of recreating QDOS, the QL's operating



system for disk operations and the like, is about as good as software emulators go, i.e. its very slow. As a benchmark, I formatted a disk, which took about 8-8.5 minutes. Disks are formatted to the QL disk format not AmigaDOS. Loading and saving is also slow - all too reminiscent of the speed experienced with microdrives.

If you have a battery backed clock in your Amiga then it will be recognised by the emulator, but the Amiga's mouse and AmigaDOS's RAM disks are not emulated, which is a shame.

As I said before, the QL Emulator comes with three disks. The main disk contains the emulator program, device drivers and miscellaneous files. The second disk contains the source code for the emulator if any programmers think they could improve anything. The third disk is in QL format and contains demonstration programs and the like for you to experiment with. Of the 20+ programs, some are unuseable due to the fact the instructions are in German, while others are decidedly good. These include Quill, the word processor distributed with the QL which although is crude and slow by today's standards is good nevertheless.

Once you learn to put up with the slow disk accessing, you'll find that the vast majority of QL programs will work without a hitch. However, there are some programs which may crash the Amiga due to them be tailored to work with the 68008 chip. A supplied patch program should be used in such cases and stops such crashes occurring.

If you have a QL (or access to a QL) which doesn't have any add-on 3.5" disk drivers its also possible to transfer programs from QL to Amiga via an RS232 cable writing programs in SuperBasic at the QL end and emulated-QL end to transfer the program.

If you've ever used a QL before, you'll be astounded at just how good QL Emulator is. Of course, being a purely software emulator with no help from special hardware means that it is slow in places, but that's to be expected.

Being a PD you don't get much in the way of instructions but for the price you're getting one heck of a piece of software.

The QL Emulator satisfies many roles. If you have an Amiga and are curious about the continued life of the QL, then the QL Emulator will satisfy your curiosities completely.

Ex-QL users will find it of immense interest, as will those wishing to use the many hundreds of excellent QL software packages.

Whatever you want to use it for, it will surpass your expectations.

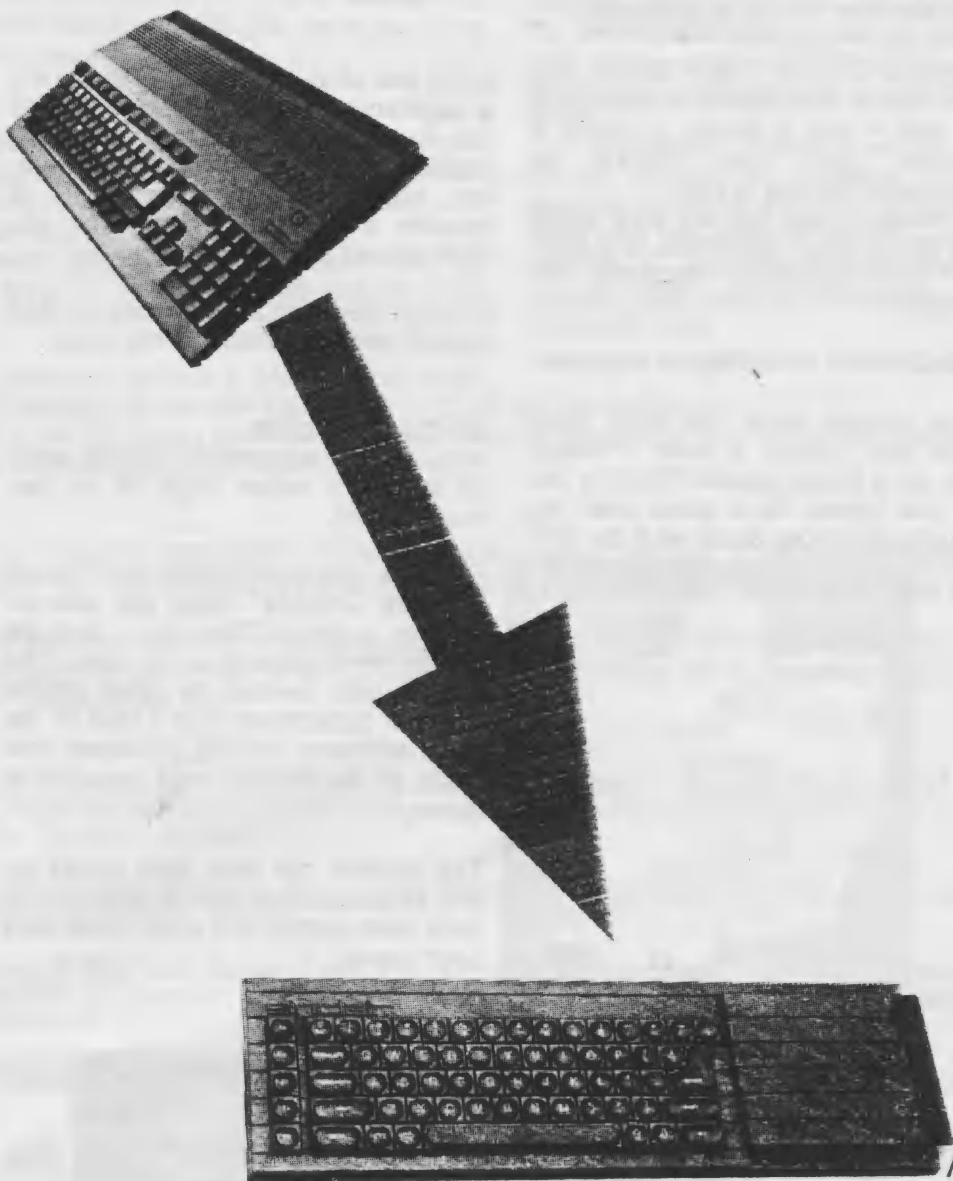
If you want to get hold of QL Emulator, a number of PD libraries stock it. Flick through an Amiga magazine and you're sure to find a library advertising it.

If you do have difficulty finding a PD

library who stocks it, it is available direct from us. See the **PDomain** column on page 15 for full details. We also stock the Spectrum emulator for the Amiga which is very good too.

Issue 3 will contain a review of the Spectrum emulator.

*Daniel Garner.*



### **Next Months Emulator Spot ...**

- A review of the new Spectrum emulator for the Amiga,
- The start of a MS-DOS section for QL users with the **PC Conqueror** or **Solution** IBM PC emulators,
- Spectrum emulation for SAM Coupé users.

After a period of being off-line, Phantom BBS is back on-line. Phantom is a Viewdata board which has quite a large amount of Spectrum coverage, and soon will be having SAM coverage too.

The Spectrum area is called Boom (naïf title of what!) and is edited by Jason Harrison. It caters for games players and serious users. It is all reasonably well written and the area hangs together coherently with the use of some nice graphics.

There are also telesoftware, game tips, reviews and many other things on the Boom area, as well as a chatline.

Phantom's SYSOP Keith Burton has spent a lot of time getting everything to look right - and it shows. If you're a Spectrum user then there'll be something of interest to you.

Phantom also has an area called Fleet Street which allows you to publish your own electronic magazine on Phantom.

In short, there's something for everyone.

Frame access times are quite slow, slower than Prestel at least. Phantom works as a limited access BBS the first time you log-on. As a guest user you can get a good idea about what the BBS

# On-Line

The only regular comms column in a Spectrum or SAM magazine.

is like and what it has to offer. Becoming a registered user is free and enables you to receive private mail using the mailbox system, download telesoftware, etc. After a time you can apply to become a full user which gives you more access to the entire database.

Phantom BBS can be accessed on 0226 340425 and is available 24 hrs a day.

## BT bodes bills

Many Prestel subscribers recently woke up to find a rather large bill in their morning post.

The bills contained billing for "Prestel Premium Charges" which are charged services such as Citiservice - and are usually very expensive to use. The inflated bills seemed to affect mainly Micronet subscribers, and a fault on the main database causing previously free areas to be charged was probably to blame.

The problem has now been sorted out and all subscribers with an incorrect bill have been notified and credit notes have been issued.

## FREE ADVERTS

If you're a SYSOP, or contribute to a bulletin board which supports the Spectrum, QL or SAM then you can claim your FREE advert in the On-Line column.

The advert will be a 1/16 A4 page sized and can contain anything advertising your BBS you want. The advert will run for as long as you like, and you can change the contents of the advert as often as you want. All we ask is that if you stop running the BBS for some reason, you tell us so we can stop the advert.

So please send us details of what you want your advert to say (bearing in mind that there is only a limited amount of text that can be shoe-horned into an 1/16 A4 sized advert). Remember to state the hours that the BBS is available on, the protocol people can access it with (remember to say if its scrolling or Viewdata) and of course the telephone number. Send the details to the usual address.

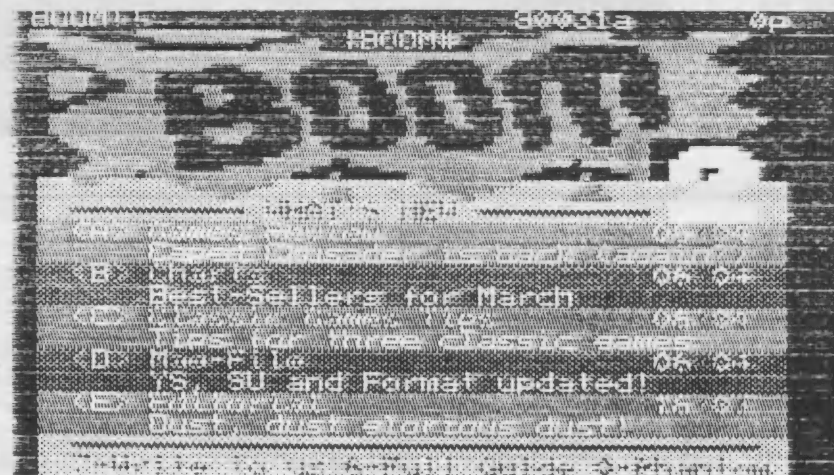
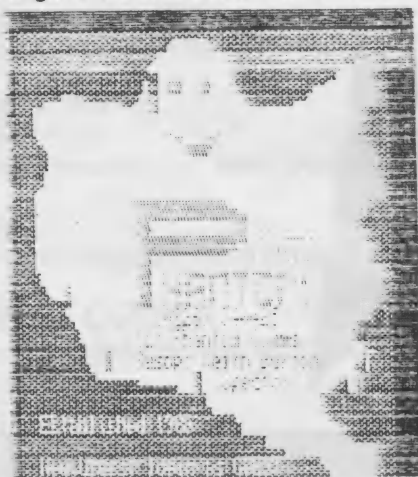
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Thanks for all the readers who have contacted us in the last month or so.

Remember too that you can now use your modem to contact our *Advice Line* service. See page 22 for full details.





# Subscriptions

Subscriptions to Sinclair & SAM Computing have been increasing at a phenomenal rate since the magazine was released at the All Formats Fair on March 23rd, where all 200 advance copies of issue 1 sold out within a couple of hours.

With overseas enquiries now gaining pace we've added special prices for overseas readers. We're sure you'll find them very competitive.

Sinclair & SAM Computing has quickly established itself as the magazine for Spectrum and SAM users, and as our QL coverage increases the magazine will complement the existing QL magazines.

Despite our competitors' best attempts, the public are still turning to Sinclair & SAM Computing in their droves.

In the space of just two issues being published our readership has grown to over 1700 - establishing it as the fastest growing Spectrum, SAM and QL magazine available.

Not only are the articles of top quality, but we cater for more uses of your computer such as comms, video presentation, emulation, etc.

We also print more reviews, and adverts from all the top companies including discounts of their products in our mail order range.

All this and more in an A4 professionally typeset publication which leaves the A5 dot-matrix printed magazines at the starting post.

## BACK ISSUES

Anybody who heard of us too late to receive issue when it was launched will be pleased to know that we still have copies left.

Back issues cost £1.75 each inclusive of postage and can be ordered using the order form below (or a photocopy of it). The price is the same for overseas readers.

## HURRY UP!

Page 47 gives you details of the exciting contents of issue 3, which includes a FREE cover-mounted disk for SAM users and a great DTP tutorial booklet.

Subscribe now to be assured of issue 3 being the first issue of your subscription. It's an issue you won't want to miss!



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The serious home musician will also find MUSIC WRITER bringing new life to their Spectrum. The WIMP system is very easy to use and there are powerful editing facilities that allow blocks of bars to be easily moved, copied, deleted or saved. The filing system allows files to be inserted into current work as well as the more conventional load and save facilities.

Apart from the 46K RAM disc, only tape filing is available on the 128 and +2. +3 DOS is available on the +3 and also on the +2A (if drive added). The RAM disc could serve as the main filing system with a 'snapshot' interface used to save sessions to other media.

MUSIC WRITER has a voice bank of ten voices which can be edited and saved for loading on another session. Each voice is made up of three effects. The volume effect shapes the 'attack' and 'decay' of the sound. The pitch effect alters pitch relative to the pitch set by the staff and any accidentals. Changes can be as little as a quarter tone to as much as one octave. The noise effect adds noise to create drum and wind sounds. Unlike many other music programs, the volume on any voice can be changed without having to alter the voice's volume effect. This enables accents, crescendo and diminuendo marks to be played - creating much more expressive music than is usually possible on a Spectrum.

The manual assumes no knowledge of any aspect of MUSIC WRITER. WIMP, icon actions, music notation used and envelopes are all explained.

All the distinct major and Minor keys are available along with seven time signatures most commonly used. Each bar can be set to play at any tempo between 50 and 180 beats per minute. Price includes binder, manual and demo scores.

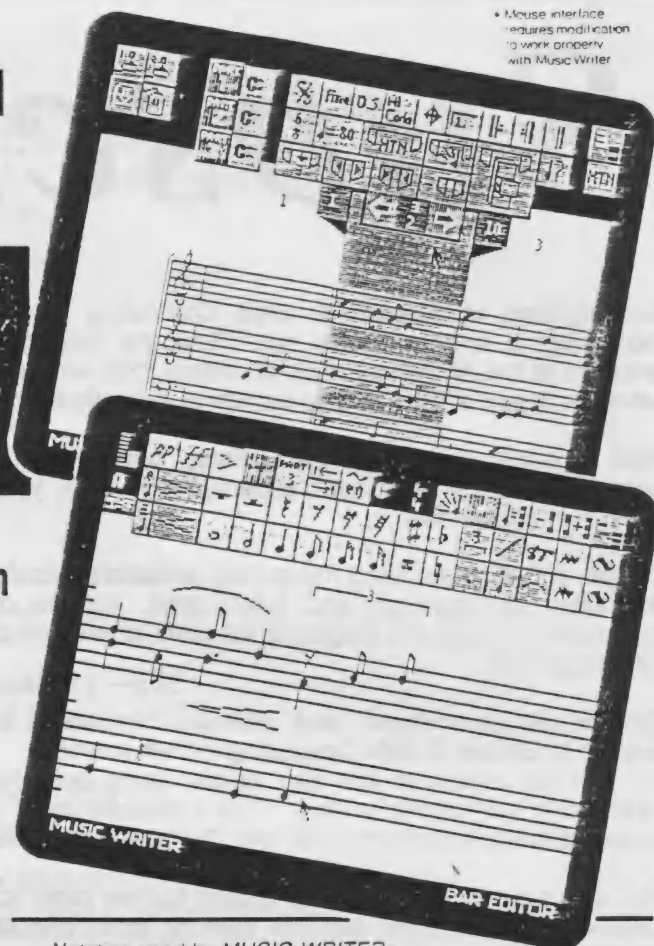
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### Features:

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### Notation used by MUSIC WRITER:

- \* Repeat marks and bar lines
- \* Volta brackets \* Segno \* Fine \* Coda \* al Coda
- \* D.S. \* D.S. al Coda \* D.S. al Fine
- \* Notes and rests from semibreve to demisemiquaver
- \* Triplet (rests allowed)
- \* Dotted notes \* Staccato notes
- \* Accidentals \* Tie and slur \* Glissando
- \* Trill \* Turn \* Mordent
- \* Accent \* Crescendo and diminuendo





# Q L Corner

## MAY 1991 SINCLAIR &amp; SAM COMPUTING 37

**Jamsten-TCL** Tel:010-4664210300 (V21/22/22bis/23) Sweden

**QLAT** Tel:010-3130962265 (V21/22/22bis/23) Holland QL echo node 2:283/500

**Quasar** Tel:010-3135216520 (V21/22/22bis/23) Holland QL echo node 2:282/501

The last BBS is run by the Dutch QL user group *Sin\_QL\_alr*.

### QL Emulator

As you probably already seen on page 32, the public domain QL emulator for the Amiga seems to be very good.

We'd be very interested to hear from anyone using the software, especially on subjects such as compatibility.

By the way, there's also supposed to be a QL emulator available for the PC. Despite much searching, everyone I've spoken to hasn't been able to give me a source for the software. Perhaps you can help? If you can, please write to the usual S&SC address.

Sector Software (0772 454328) are also giving the QL Emulator away free with Amigas for QL users upgrading to the machine. A great way to upgrade your machine but retain compatibility with the vast majority of your existing software collection.

### PD Sources

Apart from the range of PD available detailed last issue from Qubbesoft PD, CGH Services' latest catalogue contains a list of all the PD software and shareware which they stock.

There is a lot available and we should be including reviews of QL PD software as the *PDomain* column in the magazine increases over the next couple of months.

The games cover a range of categories, such as games, adventures, utilities, adventure utilities, educational, graphics, fractals and mathematical recreation programs.

The PD software is available at a very reasonable £1.00 per batch, with the customer supplying the blank media (either MDV or disk).



How many readers have purchased magazines which have included on the front cover items such as tapes and discs to find them faulty on arrival home.

The procedure for replacement as detailed inside one of the more popular Spectrum magazines is to send it back to the publisher or manufacturer (at your own expense of course) and then wait for up to 28 days for a new one to arrive. Why should you be put to this additional inconvenience and expense to have faulty goods put right.

The Sale of Goods Act states that a consumer can expect a full refund or replacement from the seller when you have received goods which are faulty or not of merchantable quality.

Readers should take the items back to the shop from where it was purchased and demand a replacement. The shopkeeper will no doubt deny all responsibility and rely on you sending it back but do not be deterred. If it's faulty it's the sellers responsibility to sort it out not the manufacturer's.

One argument that I have come across is that it's "free" so don't expect too much. This is totally irrelevant as these so called "free" items as we all know are included in the cover price of the magazine. They are all goods in the eyes of the consumer law.

Magazines at nearly £2.00 are expensive enough without the additional expense of having to find even more money to put things right. Get back to that shop right away.

Mr A.Beales, Suffolk.  
(Information verified with the Trading Standards Office.

Ed: Well said that man! There's nothing more annoying than buying a magazine and then finding that the accompanying tape doesn't load properly. This whole cover-tape thing has gone way too far anyway on a number of scores. The most major of which is detailed in the News column.

# Letters

## Suggestions

Well done on producing your first issue. I found it very enjoyable and I won't hesitate in taking out a subscription. I have some suggestions for possible future features:

1. Conversions of Spectrum 48K programs so that they run from Spectrum +3 disk okay and allow you to print out from the program
2. On the subject of your forthcoming bulletin board, I hope you can put the contents of your public domain software library on it so that it can be downloaded
3. How about some hardware projects? As I recall, there were some excellent ones in your +3 Contact (PIP) such as the speech synthesiser

D.Cook, Solihull

Thanks for the suggestions. I'll certainly bear them in mind. On the subject of our PD software available on our BBS, you can already can some of our PD software on Micronet. We've sent some of our programs to Brian Gaff who edits the Spectrum area and they are being put into the telesoftware area slowly.

As for hardware projects, we too would love to see some in the magazine. However, the time consuming nature of producing an article about hardware project means that we cannot do it by ourselves, and rely on readers providing such articles. So if anybody has got an idea for a hardware project which would make a good article then get in touch with us. Remember that we pay for all articles printed, so you can cover some, if not all, of your costs in producing the hardware.

Your idea about a program conversion feature for +3 users is very interesting, but again writing this sort of article is very time consuming, but if anybody has converted any old 48K programs so that they are completely +3 compatible, get in touch with us and we'll start to compile an article.

# C PROGRAMMING

C is a highly portable language designed in the early 1970's during the development of the UNIX operating system. Its popularity is spreading fast, mainly due to its structured and highly modularised approach to program design.

Although not particularly wide-spread on 8-bit computers, there are several good implementations of C on the Sinclair QL, and a version for the Spectrum range by HiSoft, and a good implementation in CP/M which is useable on the Spectrum +3 and QL with the CP/M operating system.

This series of articles provides a complete guide to programming in C, from basic principles to advanced programming methods.

As almost everyone will be familiar with Basic, there are certain things which must be understood about how C works. Basic uses a separate program called a Basic Interpreter which interprets each statement in the program as it comes to it every time the program is run, into the machine code needed to do the desired job. This is a relatively slow process, and although Basic compilers are available they are specific to a given Basic version and computer. Thus, Basic code is slow in execution, and a Basic program cannot be transferred

easily to another computer's Basic.

Before C became as popular as it is today, programs which needed to be fast had to be written in Assembler. However, assembly programming is a slow process and differs from machine to machine.

Although many languages have overcome these limitations, only C has gained wide spread acceptance. All C implementations on whatever computer worth their salt should include a compiler to translate your C program into pure machine code which will be very fast in execution. As most C implementations are pretty standard, it should be possible to transfer your C program to another computer running C and compile it on that computer. Most machine-specific features as screen handling and DOS operations need to be altered though

C is a structured language in which programs are written in a modular form which when compiled provide a module which can be incorporated into more complicated programs.

The popularity of C stems from its flexibility. Not only does it have features of high-level languages such as data-types and functions, but it also offers a low-level approach associated with

assembly such as bitwise operations and access to registers. It is commonly said that C is a mid-level language.

## PROGRAM STRUCTURE

A C program is made up of a number of functions. These include the **main ()** function and declarations and definitions of data objects. The **main** function can be considered as the main body of your program. Although it does not have to contain much, program execution begins and ends with the **main** function.

Every program must have a **main** function which can only appear once in the program. The parentheses **()** following the word **main** must be present although there must be no parameters included (parameter passing will be explained later).

The **main** part of the program is enclosed with **{ }** brackets. Within the brackets, there will be assignment statements, declarative statements and C function calls. Take the following program as an example:

```
/* ADDITION */
main()
{
    float a,b,sum;

    printf("Enter two numbers: ");
    scanf("%f %f",&a,&b);
    sum=a+b;
    printf("The sum is %f",sum);
}
```

The program consists of 5 statements within the **{ }** brackets, a declarative statement (**float a,b,sum**), an assignment statements (**sum=a+b**) and three function calls, two to print things on the screen (with the **printf** command) and one to read the keyboard (with the **scanf** command).

It is important to include a semicolon **;** at the end of each program line. This is a terminator which tells the compiler where the end of a particular line ends.

## Declarative Statements

Declarative statements for variables consist of a number of variable names accompanied by a data type specifier. Declarations begin with the name of the data type. These are as follows:

**float** for single precision floating point numbers, such as 4.3413. These are expressed as a 32 bit number.  
**double** for double precision floating point numbers, which are 64 bit number



with an effective range of  $\pm 1.7E+308$ .  
**int** for integer numbers, which are whole numbers without a decimal point. These are expressed in 16 bits.  
**unsigned int** unsigned integers, with a range of 0 to 65535.

**long** for long integer numbers, expressed as a 32 bits number with a range of -2147483648 to 2147483647.

**unsigned long** unsigned long integer numbers, with a range of 0 to 4294967295.

**char** for storing an ASCII character or one byte. These are expressed as an 8 bit number with a range of -128 to 127.

**unsigned char** unsigned character, expressed in 8 bits in the range of 0 to 255.

Before any variable can be used in a C program, we must declare its type and its name. Examples:

```
int a,b,c,f; /* integer declarations for
the variables a,b,c and f */
double velocity; /* declaration of the
variable velocity as a double precision
floating point number */
char ch;
```

### Constants

A constant is some quantity which will only have one value during the duration of the program execution, such as PI. Constants are defined using the **#define** statement, which must appear before the **main()** function in the program. For example,

```
#define PI 3.1415927
main()
{
    ....;
    ....;

    area=PI * diam;

    ....;
    ....;
}
```

The hash sign (#) must be in the first column of the line.

### Expressions

An expression, is a constant, a variable or a combination of either or both which are separated by one of the arithmetic operators. See the following example:

```
int a,b;
int subtraction, addition, minus,
division, remainder, multiplication;
```

```
subtraction = a-b;
addition = a + b;
minus = - a;
division = a / b;
remainder = a % b; /* same as
modulus */
multiplication = a * b;
```

### Relational Operators

Relational operators are used within if statements as conditional expressions. For example,

Symbol	Example	Description
==	a == b	a equal to b
<	a < b	a less than b
<=	a <= b	a less than or equal to b
>	a > b	a greater than b
>=	a >= b	a greater than or equal to b
!=	a != b	a not equal to b

### Logical Operators

The logical operators **AND(&&)** and **OR(||)** allow even more complex conditional statements to be built up. If we need to test a number range for example, relational operators force us to use the following statements:

```
if (testnumber > 50)
if (testnumber < 75)
```

Using a logical operation this is incorporated into one statement, if **(testnumber > 50 && testnumber < 75)**

### Unary Operators

The increment and decrement operators serve to add or subtract 1 from an integer variable. For example, **sum=sum+1;** can be replaced with **sum=sum++;** Vice versa, **sum=sum-1;** can be replaced with **sum=sum--;**

The **++** and **--** operators can also be used as a compound arithmetic expression. For example, **c=a+b++;** will add a and b together, put the result in c and then increment b by 1.

And, **c=a+ -b;** will decrement b by 1, then add the result to a and put the result in c.

### Bitwise Operators

C contains a number of operations only normally found in assembly. These include bitwise operations on int and char type variables.

Symbol	Description
&	bitwise AND
	bitwise OR

^	bitwise exclusive OR
>>	right shift
<<	left shift
~	one's complement

For explanations of what the bitwise operators do, let us assume that the variable **var1** and **var2** contain the following binary numbers respectively 10010011 and 11110000.

Bitwise AND: **var1 & var2** produces a result of 00010000

Bitwise OR: **var1 | var2** produces a result of 11110011

Bitwise XOR: **var1 ^ var2** produces a result of 00110001

The shift operations shift the bits in a variable to the left or right by a specified number of bits, while locations being left empty as a result of the shift becoming zero.

So if the variable **var** contains the binary number 10010011, the right and left shift operations would be as follows:

Right shift: **shift\_result = var >> 3** produces 00010010

Left shift: **shift\_result = var << 3** produces 10011000

The one's complement operator **~** simply inverts the bits of a variable. So if **var** contains 10010011, the following expression: **comp\_result = ~ var** will put the binary number 01101100 into the variable **comp\_result**.

### Ternary Operator

C provides a statement structure which employs a ternary operator. The following express has the effect of saying: if the value of **y** is greater than the value **z**, then variable **x** takes the value of variable **y**, else variable **x** takes the value of **z**,

```
x = (y > z) ? y : z ;
```

### Shorthand Operators

Operators can be combined in a special form in a sort of short-hand. These are as follows:

Short-hand	Equivalent to ...
a * = b;	a = a * b;
a / = b;	a = a / b;
a - = b;	a = a - b;
a + = b;	a = a + b;
a & = b;	a = a & b;
a << = b;	a = a << b;
a >> = b;	a = a >> b;
a & = b;	a = a & b;
a   = b;	a = a   b;
a ^ = b;	a = a ^ b;

## Include files for I/O

The **printf** function allows us to display things on the screen. However, it is important to realise that the basic C environment consist of a virtually empty shell. In order to do anything really useful, like display things on the screen, etc we need to use the **#include** statement to include the relevant source file on disc into your C program. This source file enables you to access additional functions in your own C programs.

Virtually all C compilers come with a set of standard **#include** files. For their file names, you will have to consult the compiler's manual. However, they are usually the same for most compilers.

The command has the syntax:

**#include <file name>**

The **#include** file we are mainly interested in at the moment is **stdio.h** (standard I/O header file). The example program shows you how this can be done:

```
/* String Input */
#include <stdio.h>
main()
{
    char name[10];
    printf ("Please enter your first
name...");
    scanf ("%s",name);
    printf("Hello, %s",name);
}
```

## Formatting your Output

The **printf** function in C allows you to display text or variables on the screen. It takes the form:

**printf ("format string", variables);**

The format strings available are as follows:

<b>%c</b>	one character output only.
<b>%uc</b>	same as <b>%c</b> except this is for unsigned char variables.
<b>%d</b>	decimal integer values.
<b>%ud</b>	unsigned integed values.
<b>%ld</b>	long int type number.
<b>%e</b>	special scientific notation for expressing very large or small numbers (3.6E-5)
<b>%f</b>	floating point number - must include decimal point even if

4.0 for example

<b>%u</b>	unsigned integers
<b>%x</b>	hexadecimal (base 16) value
<b>%g</b>	general form for representing values in the shortest form either <b>e</b> or <b>f</b> format numbers

<b>%o</b>	octal (base 8) numbers
<b>%p</b>	point values
<b>%s</b>	string variables

Examples of how these work are best explained in program form.

```
/* Examples Of Format Controls */
main()
{
    printf("ASCII character 66: %c\n",66);
    printf("Decimal 65 integer: %c\n",65);
    printf("Scientific notation: %e\n",
15247.7);
    printf("String variable: %s\n",
"Greetings");
    printf("Octal number 9 in decimal format:
%g\n",9);
    printf("Integer with leading zeros:
%05d\n", 54);
    printf("Floating point number: %0.5f\n",
567.3);
    printf("Short general form: %g\n",24.34);
    printf("Short general form: %g\n",
0.0000075);
}
```

This program produces the following output on the screen:

```
ASCII character 66: B
Decimal 65 integer: 65
Scientific notation: 1.52477e004
String variable: Greetings
Octal number 9 in decimal format: 11
Integer with leading zeros: 00054
Floating point number: 567.30000
Short general form: 24.34
Short general form: 7.5e-006
```

If you are wondering what the **\n** means in the **printf** statements, it is one of the escape sequences which give you additional control of what and how things get printed. The full list is as follows:

Symbol	Description
<b>\\</b>	backslash
<b>\'</b>	single quote
<b>\"</b>	double quote
<b>\?</b>	question mark
<b>\r</b>	carriage return
<b>\t</b>	tab(horizontal)
<b>\v</b>	vertical tab
<b>\xqqq</b>	insert ASCII code qqq
<b>\a</b>	audible bell
<b>\b</b>	backspace
<b>\f</b>	formfeed
<b>\n</b>	newline
<b>\0</b>	NULL character

The **scanf** function allows a string of characters to be entered into a program. However, one limitation of the **scanf** function is that if you include a space in

the string the function is exited from. This is because a space signals the end of the string being input.

The **gets** function on the other hand enables the program to read everything from the keyboard until the Enter key is pressed. If you only require the user to press one key, or you don't want the user's input to be display on the screen, you should use the **getchar()** function, which takes the form **key = getchar()** to subsequently echo this character to the screen you use **putchar (key)**.

*Spectrum +3 users might like to note that this issue's S&SC Extra disk contains a version of the C language called Small C.*

*It works under the CP/M operating system, and although it is not the most wonderful implementation we've seen, it serves as an excellent program for beginners to 'learn the ropes'.*

*Full details can be found on pages 24-26.*

**C Programming** is written by Paul Wallace and builds up month by month into a complete guide to using the language.

## Next month:

Program flow - if...then, while loop, for loops.  
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